U.S. DEPARTMENT OF COMMERCE

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COMMERCE SPECTRUM MANAGEMENT

POLICY ADVISORY COMMITTEE

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COMMITTEE MEETING

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THURSDAY,

MARCH 4, 2010

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The Commerce Spectrum Management Policy Advisory Committee met in the Diplomatic Boardroom of the Herbert C. Hoover Building, 1401 Constitution Avenue, N.W., Washington, D.C., at 9:00 a.m., Bryan Tramont and Dale Hatfield, CSMAC Co-Chairs, presiding.

PRESENT:

DALE HATFIELD, Co-Chair

BRYAN TRAMONT, Co-Chair

MICHAEL C. CALABRESE, Member

MARTIN COOPER, Member

MARK E. CROSBY, Member

DAVID L. DONOVAN, Member

GARY EPSTEIN, Member

BRIAN FONTES, Member *

HAROLD FURCHTGOTT-ROTH, Member

PRESENT:(Cont'd)

ROBERT M. GURSS, Member

KEVIN C. KAHN, Member

JAMES A. LEWIS, Member *

DARRIN M. MYLET, Member

RICHARD REASER JR., Member *

GREGORY ROSSTON, Member

R. GERARD SALEMME, Member

JENNIFER WARREN, Member

* via telephone

T-A-B-L-E O-F C-O-N-T-E-N-T-S

T-A-B-L-E O-F C-O-N-T-E-N-T-S (Cont'd)

Adjourn

 1   P-R-O-C-E-E-D-I-N-G-S

 2   9:15 a.m.

 3   CO-CHAIR HATFIELD: Why don't we

 4   get started. I'd like to call the third

 5   Commerce Spectrum Management Advisory

 6   Committee of the second series, the third

 7   meeting of the second series of CSMAC, the

 8   meeting to order.

 9   And it's been suggested that maybe

10   we go around the table. I think everybody

11   knows everybody, but why don't we just make

12   the record clear and so forth, go around the

13   table one time and introduce ourselves. And

14   then I'll turn it over to Anna Gomez.

15   So, why don't we start down here

16   and go around the group then. Bob.

17   MR. GURSS: Bob Gurss, Association

18   of Public-Safety Communications Officials.

19   CO-CHAIR HATFIELD: Remember, we

20   should use the microphones when we can.

21   MR. GURSS: Bob Gurss with APCO.

22   MR. FURCHTGOTT-ROTH: I'm Harold

 1   Furchtgott-Roth with Furchtgott-Roth Economic

 2   Enterprises.

 3   MR. EPSTEIN: I'm Gary Epstein, EVP

 4   at SkyTerra.

 5   MR. COOPER: I'm Marty Cooper. I'm

 6   the -

 7   (Off the record comments.)

 8   MR. CALABRESE: Michael Calabrese,

 9   New America Foundation.

10   CO-CHAIR TRAMONT: Bryan Tramont,

11   Wilkinson Barker, co-chair.

12   MR. LEIBOVITZ: John Leibovitz with

13   the FCC.

14   MR. CROSBY: Mark Crosby, EWA.

15   MS. WARREN: Jennifer Warren,

16   Lockheed Martin.

17   MR. MYLET: Darrin Mylet, Adaptrum.

18   MR. SALEMME: Gerry Salemme, Eagle

19   River.

20   MR. ROSSTON: Greg Rosston,

21   Stanford.

22   MR. RAY: Neville Ray, T-Mobile

1   USA.

2   DR. KAHN: Kevin Kahn, Intel.

3   CO-CHAIR HATFIELD: Okay. Thank

4   you. I'll turn the meeting then over - oh,

5   I'm sorry. Thank you. I knew I would do

6   that.

7   The people on the conference call,

8   could you identify yourself, please? Hello?

9   MR. FONTES: This is Brian Fontes,

10   National Emergency Number Association.

11   CO-CHAIR HATFIELD: Thank you.

12   MR. REASER: Rick Reaser, Raytheon.

13   MR. LEWIS: Jim Lewis, CSIS.

14   CO-CHAIR HATFIELD: Anybody else?

15   Okay. Why don't, then, I turn it over to Anna

16   Gomez who of course is Deputy Assistant

17   Secretary of Commerce for Communications and

18   Information here at NTIA.

19   DEPUTY ASSISTANT SECRETARY GOMEZ:

20   Well, good morning. It's my pleasure to

21   welcome you again to the Department of

22   Commerce for this meeting of the Commerce

1   Spectrum Management Advisory Committee.

2   Larry Strickling, our Assistant

3   Secretary, is testifying this morning, which

4   is why he can't be with us today and he sends

5   his regards.

6   I want to thank our co-chairs Dale

7   and Bryan, and all the members, for your

8   extraordinary commitments of time and energy

9   to this committee. I know you have been

10   exceptionally active and have worked hard

11   within your sub-committees to define issues

12   and produce some draft reports.

13   Now, it's a truism that good

14   spectrum policy is as important as ever. We

15   can't of course rest on our laurels. And with

16   being weeks away from the release of the

17   National Broadband Plan, it is more and more

18   apparent that good spectrum policy is the

19   foundation for good broadband policy.

20   Now, what we're looking at as

21   we're moving forward, is ways to use a new and

22   more efficiently spectrum that can make a

1   significant contribution to a more competitive

2   broadband internet access marketplace.

3   Research and development can lead to these new

4   and innovative spectrum access technologies,

5   and these can spur a new round of innovation

6   that will increase domestic spectrum

7   efficiency through sharing an opportunistic

8   use.

9   If there's one thing we know about

10   spectrum, is that there is increasing scarcity

11   in beachfront properties. So, if we're going

12   to get better at expanding the availability

13   and affordability of broadband, we need to get

14   better at sharing between federal users,

15   between commercial users, and between federal

16   and commercial users. We need your expert

17   advice on this issue.

18   Now, the reports that you've been

19   working on for today's meeting as well as for

20   further discussions on spectrum, inventory,

21   transparency, adjacent band interference,

22   dynamic spectrum access and incentives will

1   lead the way in spectrum management.

2   What we want to emphasize to you

3   is to be as specific as possible about the

4   actions that NTIA can take to implement your

5   recommendations.

6   As always, I don't know how this

7   happens, the work is just beginning and it's

8   going to continue as you continue to define

9   and explore these issues in your future work

10   and advice to NTIA.

11   So, I want to thank you again and

12   let you guys get started. And with that I

13   will turn it back to our co-chairs Dale and

14   Bryan.

15   CO-CHAIR HATFIELD: Okay. Thank

16   you so much.

17   DEPUTY ASSISTANT SECRETARY GOMEZ:

18   Thank you.

19   CO-CHAIR HATFIELD: Very helpful

20   remarks and very helpful reminders. We're

21   going to follow the format that we've done

22   previously. We'll start with two

1   presentations, and then we'll of course turn

2   to the reports from some of the sub-

3   committees.

4   And so I'd like to turn the podium

5   over, if you will, to John Leibovitz, of

6   course, who I'm sure most of you know is the

7   Deputy Chief of the Wireless Bureau at the

8   Federal Communications Commission. He will be

9   talking about his view of spectrum from the

10   Commission standpoint and in relation to, of

11   course, the National Broadband Plan which

12   we're all anxiously awaiting the release of.

13   John.

14   MR. LEIBOVITZ: Thanks, Dale, for

15   the introduction. And, Anna, thanks to you

16   and Larry for your leadership at NTIA.

17   At the FCC, we consider ourselves

18   fortunate to have good friends at the NTIA,

19   many of whom we've spent long hours in

20   windowless rooms during the transition over a

21   year ago. Which seems like a really long

22   time, but it was only a year ago.

 1   And thanks to Dale and Bryan for

 2   stewarding this CSMAC. I think one motion

 3   today might be to add another vowel to

 4   acronym.

 5   (Off the record comments.)

 6   MR. LEIBOVITZ: But the NTIA is

 7   fortunate to have a solid group of outsider

 8   spectrum experts - well, insider/outsiders to

 9   advice the NTIA and it's a good to see a lot

 10   of people here that I've come to know over the

 11   past year and beyond. So, for those of you I

 12   haven't met, it's nice to meet you as well.

 13   On behalf of the FCC and Chairman

 14   Genachowski, I'm here to talk about the

 15   National Broadband Plan which, as you know, is

 16   due to be released on March 17th. And

 17   actually, the deadline was moved a month

 18   because the dog ate our Broadband Plan. Which

 19   means that my well-planned vacation this past

 20   week wasn't very well planned, and I'm here to

 21   report to everyone that especially with

 22   offshore bank accounts, that there is

 1   BlackBerry service in the Cayman Islands.

 2   It's just 2.5G, not 3G.

 3   Okay. So, let's talk about the

 4   National Broadband Plan. The National

 5   Broadband Plan, as everyone knows, is the

 6   Recovery Act's special homework assignment for

 7   the FCC.

 8   While the NTIA has been hard at

 9   work on the BTOP grants which were designed to

10   stimulate broadband economic activity in the

11   near term, the FCC has been working on a

12   comprehensive plan for the longer term and

13   it's been a lot of work.

14   The Recovery Act was not modest in

15   its aspirations, so our charter has been to

16   look at some of the broad structural issues in

17   broadband; deployment, adoption, utilization,

18   growth. And obviously each of these alone is

19   a huge topic, but also the Act required us to

20   go farther and focus on the potential of

21   broadband to address big challenges in

22   American life; healthcare, energy, public

 1   safety, education, workforce development and

 2   so on. These are the outputs of broadband.

 3   And as the chairman is fond of

 4   saying, broadband isn't the answer to any one

 5   problem, except maybe broadband, but it can be

 6   the solution to every - part of the solution

 7   to every problem. And so he's really

 8   encouraged us to think as we've gone through

 9   this process, not just about the sort of wonky

10   detail policy details as they relate to the

11   infrastructure, but also about how does this

12   stuff really affect people's lives.

13   So, what have we been up to? Over

14   the past nine months the FCC has, among other

15   things, held dozens of workshops and field

16   hearings with hundreds of experts, several of

17   whom are in the room today, sifted through

18   tens of thousands of pages of written

19   comments, built and analyzed very detailed

20   broadband deployment models. I'm a little bit

21   of a model junkie. I've done a fair amount of

22   modeling in my time, and I can say that some

 1   of the models that were developed in this

 2   process are fairly impressive in their scope.

 3   We've conducted very large-scale

 4   consumer surveys. We've reached out to

 5   partners throughout the federal, state and

 6   local governments. And we've even taken trips

 7   abroad to exchange best practices with

 8   government industry leaders around the world.

 9   And probably the hardest part,

10   we've worked to pull all of our learnings

11   together into a consistent and coherent plan

12   with actual recommendations on how to ensure

13   US leadership with broadband.

14   We've been lucky to have a

15   committed team of long-time FCC staffers, as

16   well as a bunch of new folks coming from a

17   diversity of backgrounds in business, in

18   academia, public interest to help us pull the

19   whole thing together.

20   And I've learned a lot of things

21   during this process, but I could - I'll share

22   one of them with you today, which is that hell

 1   is a place where management consultants write

 2   the footnotes, and the lawyers sidecheck them.

 3   (Laughter.)

 4   MR. LEIBOVITZ: And I say this as a

 5   former management consultant - a lawyer turned

 6   management consultant.

 7   So, we've also been lucky to have

 8   an insightful and collegial group of

 9   commissioners to bring a variety of viewpoints

10   to the plan. And in particular given today's

11   focus, I want to give a special thanks to

12   Commissioner Baker. We've very lucky to have

13   someone who knows a thing or two, or really

14   two million things, about spectrum policy.

15   Commissioner Baker's thought

16   leadership has been extremely valuable as

17   we've gone throughout this whole process.

18   So, now before we turn to

19   everyone's favorite topic which is spectrum,

20   let's take a moment on the topic of mobile

21   broadband. And I'm going to echo some of the

22   remarks that the chairman made also week and

1   hopefully fill in some more details.

2   As the chairman explained in his

3   talk with the New America Foundation last

4   week, mobile broadband is emerging as one of

5   the great innovation platforms in America both

6   for innovation and for growth.

7   The chairman described a range of

8   present-day examples where mobile broadband

9   has already begun to improve real people's

10   lives, and these examples really only hint at

11   the possibilities of things to come.

12   So, he described things like the

13   school bus that has become a rolling study

14   hall because of cellular-connected wi-fi. A

15   new category of energy apps that will allow us

16   to adjust our usage and consumption on the

17   fly. Mobile medical technologies to treat

18   chronic conditions like diabetes, but also to

19   help in emergency situations, in ambulances

20   with first responders.

21   And more broadly he pointed out

22   that, which is a remarkable fact, that

1   according to Gartner the apps economy, the

2   sector of the economy that's been created by

3   people developing new applications for

4   devices, smartphones and other devices like

5   that, is estimated around four billion

6   dollars, and it was basically nonexistent a

7   few years ago.

8   So, this is tremendous growth, and

9   a lot of these apps are the brainchildren or

10   small companies and entrepreneurs. And of

11   course that's additive to all the

12   infrastructure, investment that's going on at

13   infrastructure and network. So, there's a lot

14   going on which you all know, but it's

15   important to reinforce the context.

16   To a lot of people, the ascent of

17   mobile broadband reminds them of the early

18   days of the PC or the internet, and has that

19   feel of something that's creating whole new

20   classes of enterprises both in the public

21   sector and in the private sector.

22   And I should point out that when

1   we talk about mobile broadband, we're thinking

2   about the broader ecosystem. So, obviously

3   mobile broadband includes wireless access over

4   licensed cellular networks, but it also

5   includes Bluetooth and Wi-Fi and other

6   unlicensed technologies which have proven to

7   be very complementary, I think, over time to

8   licensed broadband service.

9   Looking ahead, it also includes

10   innovative access models which we're going to

11   hear more about later on today, including

12   opportunistic models that are now being

13   developed and tested with support of the NTIA

14   and others and some of the people in this

15   room, and the plan will have something to say

16   about those technologies as well as the more

17   conventional ones.

18   The chairman pointed out last week

19   that there's no guarantee that mobile

20   broadband will reach its full potential.

21   There are a lot of potential risk factors, but

22   one of the greatest is that we simply don't

1   have enough network capacity to meet the new

2   demand. So, the numbers are impressive and

3   you've probably heard some of these before,

4   but I will restate them.

5   So, AT&T reports traffic growth of

6   over 5,000 percent over the last three years.

7   I think that's probably up since they shared

8   that number with us.

9   Cisco recently updated their

10   wireless visual networking index forecast.

11   They project an increase from 17 petabytes to

12   740 petabytes by 2014. That's more than 40

13   times.

14   Research conducted by Validas for

15   Consumer Reports, suggests that the average

16   iPhone user consumes over 270 megabytes per

17   month.

18   T-Mobile at one of our workshops,

19   reported that the average G1 user consumes

20   about 300 megabytes per month. So, in a

21   similar range.

22   The average mobile Aircard user

1   according to the same Consumer Report study,

2   consumes about 1.4 gigabytes a month, and

3   these numbers reflect tonnage hitting the

4   mobile network. So in other words, this

5   includes, and this is net of the benefits from

6   offloading to Wi-Fi which some reports suggest

7   can be as high as 40 percent of network

8   traffic.

9   And then meanwhile they give a

10   sense of where demand is going. Clearwire

11   reported last week that customers are using on

12   average, seven gigabytes per month. And that

13   number increased dramatically when they

14   upgraded their network to 4G.

15   So, it wasn't very - I'll just put

16   in context it wasn't that long ago that a

17   certain flip phone was the cutting edge device

18   that we all coveted and only a few could

19   afford, but now these kind of devices are

20   being sold as impulse items in the grocery

21   store next to bubblegum and batteries. So,

22   it's pretty incredible what's happened in the

1   last few years.

2   And we have to ask ourselves, I

3   think, what happens when every American has an

4   advanced smartphone or an Aircard or both or

5   some new device that hasn't been invented yet?

6   Today, over 25 percent of

7   Americans are cord cutters, and what happens

8   when these people on the move take the next

9   logical step and really embrace mobile

10   broadband?

11   This also includes the government,

12   which is a big user of mobile broadband,

13   including on commercial networks. Everyone

14   from the Commander-in-Chief on down now

15   depends on BlackBerry e-mail.

16   What happens when these people

17   move to next generation apps delivered over

18   mobile broadband? The answer is that we're

19   going to need a lot more network capacity.

20   So, wireless wizards like Dale and

21   Marty have taught that there are lots of ways

22   besides adding spectrum to increase mobile

1   network capacity. You can upgrade to more

2   efficient air interface technologies like LTE

3   or WiMax. You can employ smart antenna

4   techniques like beamforming or MIMO. You can

5   increase spatial reuse through cell splitting

6   or dense cell deployments.

7   I will be the first to admit that

8   I am not the smartest person in the room on

9   this topic. And neither is Blair Levin, but

10 he's not in the room.

11   (Laughter.)

12   MR. LEIBOVITZ: But we've consulted

13 with some pretty smart people both inside and

14 outside the FCC. We've run sensitivity

15 analyses, and our bottom line is that at the

16 rate usage is increasing, even assuming

17 increases in cell density are a spectral

18 efficiency, we as a nation are going to need

19 a lot more spectrum.

20   We've said it a few times before.

21 It takes many years to bring a new spectrum to

22 market. The history shows about six to 13

1   years. So, if we're talking about

2   accommodating needs ten years from now, we

3   have to take action now. Remember that the

4   Cisco's 40 X forecast only goes to 2014, and

5   that's less than halfway to 2010.

6   What happens if we don't have

7   enough spectrum? Will the sky fall? The sky

8   won't fall.

9   Economists will tell you that

10   there is an indifference carved between

11   capital and spectrum. And if we don't have

12   enough spectrum, there is a cost to that. The

13   cost is that networks will cost more to build

14   and operate, quality will suffer, and

15   ultimately prices will be higher, but at some

16   point it's also impractical to add capacity

17   without adding more spectrum.

18   Many people think about price as

19   the carrier's main tool to ration capacity if

20   demand grows too fast. And price might be

21   that, the main tool, but we want to make sure

22   that the US leads the world in low-cost, high-

1   performance mobile broadband. Betting our

2   entire mobile future on a demand reduction

3   strategy doesn't seem like the right approach

4   from where we sit at the FCC.

5   We think, in sum, over the next

6   ten years the US will need more spectrum.

7   We've tripled our supply over the last few

8   years. And while this will provide a runway

9   for 4G, it won't be enough to keep pace with

10   a 40 fold increase in demand, especially if we

11   want a vibrant and competitive wireless

12   marketplace.

13   So, with that as the backdrop,

14   let's talk about the plan that the chairman

15   described last week, that she described as the

16   2020 plan, 2020 mobile broadband vision for

17   America.

18   Chairman made several key points,

19   and I'll elaborate on some of these today.

20   First was the headline recommendation the US

21   should make 500 megahertz available for

22   broadband in ten years. Now, the wording of

1   this is very important. The recommendation

2   speaks to broadband generally, not to

3   exclusively licensed spectrum, not even to

4   mobile use. We don't want to pick one

5   technology paradigm over another. The

6   recommendation acknowledges the potential for

7   shared spectrum approaches or unlicensed

8   allocations. So, again, it's over ten years.

9   We intend to work closely with our

10   federal partners through the NTIA on

11   developing a road map to get us to this 500

12   megahertz goal.

13   Second, the bands. The chairman

14   mentioned a number of bands in the mobile

15   range as candidates for policy changes to meet

16   our broadband goals, of course the TV bands

17   which account for hundreds of megahertz with

18   ideal propagation characteristics, but also

19   the MSS and WCS bands. And we won't limit

20   ourselves to those specific bands. The plan

21   will suggest a way forward on the full range

22   of bands within the SCC's inventory which

1   includes AWS 2 and 3, for example.

2   The chairman mentioned the upper

3   700 megahertz D-block as part of a broader

4   public safety plan which I'll return to in a

5   moment.

6   Third, the toolbox. An essential

7   theme of the chairman's speech last week was

8   the power of flexibility to unlock the value

9   of spectrum for broadband. This applies both

10   to service rules and also potentially to

11   license transfers.

12   The chairman specifically

13   described a plan to hold a mobile future

14   auction. This is a new kind of mechanism that

15   would enable broadcasters in major markets

16   where the number of broadcast TV stations is

17   the highest, and also the need for mobile

18   broadband spectrum is the greatest, to

19   voluntarily relinquish spectrum licenses for

20   a share of auction proceeds.

21   Because of the interference

22   protections given to TV licensees, bringing up

1   a single six megahertz channel actually frees

2   up six to 12 megahertz of other spectrum

3   according to the models we've run.

4   Now, the key word here is

5   "voluntarily." The idea is to give individual

6   broadcasters the ability and the flexibility

7   to decide for themselves whether they want to

8   put spectrum into an auction.

9   We expect that the mobile future

10   auction could turn out to be as important to

11   many spectrum allocations over the next 20

12   years as the standard FCC auction has been

13   over the past 20 years. And, again, the theme

14   here is increasing flexibility in a

15   responsible way.

16   Fourth, the promise of new

17   technologies. So, new technologies promise to

18   take flexible use to a whole new level. We

19   recognize that the magic of Wi-Fi turned the

20   junk ISM band into a phenomenal industry. And

21   similarly like most of the people here today,

22   we at the FCC are excited about the potential

 1   of new technologies like dynamic spectrum,

 2   access to perform alchemical wonders with

 3   otherwise challenging bands.

 4   The chairman explained how, and

 5   I'll quote, "New ideas such as databases that

 6   dynamically enable or revoke access to

 7   spectrum in particular times and places

 8   promise to change the way we think about

 9   spectrum."

10   The plan will propose a path to

11   nurture these approaches building on the great

12   work that has been done with the spectrum

13   share test bed, and also the great work that's

14   been done in private industry and with think

15   tanks like New America and other places.

16   We are also following the lead of

17   Commissioner Copps in recommending that the US

18   allocate sufficient R&D money to advance the

19   science underpinning this technology going

20   forward. We think it's important to invest

21   for the long term, and also for the really

22   long, by making sure that we have a good

1   pipeline of technology as we reach the limits

2   of what we have now.

3   And finally public safety. Last

4   Thursday the chairman announced a

5   comprehensive plan to ensure that public

6   safety finally has a state-of-the-art mobile

7   broadband network. We have a unique

8   opportunity to develop an interoperable

9   network. As mobile broadband takes root in

10   the 700 megahertz band, it can also take root

11   for public safety.

12   Leveraging ongoing commercial

13   deployments in the band will reduce the cost

14   of building and operating the network, and the

15   plan envisions that through roaming and

16   priority access on commercial networks, public

17   safety users can be assured an abundance of

18   capacity when they need it.

19   The establishment of something

20   we're calling "ERIC," the Emergency Response

21   Interoperability Center, will ensure

22   interoperability through technical standards

 1   coordination.

 2   And finally the creation of

 3   significant funding vehicles will provide

 4   network enhancements where needed to meet

 5   public safety requirements, as well as ongoing

 6   support for the network over time.

 7   So, let's talk about next steps.

 8   We think we have a comprehensive spectrum plan

 9   which itself is part of an even more

10   comprehensive broadband plan. So, it's fair

11   to ask what's next.

12   The plan is due to be released to

13   congress on march 17th. There will be an open

14   commission meeting on the 16th where we will

15   present the plan. And it's important to

16   remember that the plan is not self-executing.

17   It is a plan.

18   So, while many of the

19   recommendations will speak to actions the FCC

20   can take within its authority for these

21   recommendations, the FCC will commence

22   proceedings with the usual opportunity for

1   full and fair comment.

2   In most cases, we will strive to

3   be clear about proposed rules. In some other

4   cases, we will start with notices of inquiry

5   to flesh out key parameters before going to

6   rulemaking. You should expect these

7   proceedings to unfold over the next 12 to 18

8   months following the plan.

9   In some other areas, the FCC will

10   make recommendations to other parts of the

11   government. In these cases, the FCC will work

12   with the administration and with congress as

13   appropriate to move the ball forward.

14   So, it's an exciting time to be in

15   spectrum policy. We're at the intersection of

16   two great communication trends over the last

17   20 years; mobility and broadband. And for

18   those of us inside the Commission, we think

19   it's an exciting place to be.

20   The actions that we take

21   collectively not just inside the FCC, but

22   throughout the administration with people at

1   this table, will shape the future in profound

2   ways for better or for worse. And so we're

3   hopeful that will a solid plan, we can

4   hopefully make sure that it's for the better.

5   So, that's it. And if people have

6   questions, I can take a few questions.

7   CO-CHAIR HATFIELD: Any questions

8   for John?

9   MR. COOPER: Well, I could make a

10   comment.

11   MR. LEIBOVITZ: Okay.

12   MR. COOPER: I think the objectives

13   of this spectrum are admirable, and I think we

14   all agree there is a little bit of an

15   inconsistency when Cisco talks about 40 times

16   requirement for the next ten years and the

17   spectrum plan mentions very briefly the

18   possibility of new technologies expanding the

19   capacity of systems, but all of the other

20   verbiage talks about taking spectrum from one

21   party and giving it to another party.

22   And that's really not going to

 1   accomplish very much, because there is, as the

 2   assistant secretary pointed out, only a

 3   limited amount of beachfront.

 4   So, the reality is that existing

 5   technologies have the ability to multiply the

 6   capacity with spectrum by many times. And it

 7   would be really nice if the FCC and the NTIA

 8   had some kind of incentive to promote new

 9   technologies rather than providing a red

10   herring that in essence says well, we don't

11   have to worry about new technologies, you can

12   just have new spectrum. That's the message we

13   are sending to people who have spectrum

14   requirements.

15   AT&T is going to solve their

16   problems, and they're not going to solve them

17   by waiting ten years. They are going to adopt

18   technologies that have been around for ten

19   years and longer, but where we haven't

20   provided adequate incentives for people.

21   So, I hope that at least this

22   thought will permeate the activities of the

1   Commission.

2   MR. LEIBOVITZ: Well, there's a lot

3   to respond to there. I think I would say that

4   I agree with most not everything you said.

5   The way you characterized it, I - first of

6   all, we're not talking about taking away

7   spectrum. We're talking about more

8   flexibility, which fundamentally means a

9   voluntary approach where people can contribute

10   more spectrum in most instances.

11   Secondly, as I said, we're

12   planning for the long term. That 40 times

13   figure was for four years. We have baked into

14   our analysis the assumption that even for sort

15   of the more conventional licensed spectrum

16   mobile technologies there will be greater

17   efficiencies in technology, there will be more

18   new style deployments, dense cell deployments

19   and other things like that.

20   But to get to a 40 times increase

21   in four years certainly is not feasible with

22   spectrum alone. And especially given the

 1   timeline, it's going to rely heavily on

 2   technology in the early years, and we're

 3   banking on that, as well as some of the

 4   spectrum that's been released over the last

 5   few years, but that's just the runway.

 6   As far as new technologies, I

 7   guess I would, you know, you can read the plan

 8   when it's released. I would differ a little

 9   bit with your characterization that we're

10   putting all of our eggs in the spectrum

11   basket. That the plan does, as I mentioned,

12   recommend the use - or the promotion of new

13   technologies, including some of the more

14   advanced spectrum access technologies which

15   are under discussion at the NTIA, to increase

16   supply of capacity and make more efficient use

17   of the spectrum, and looks for ways to do that

18   in a practical, pragmatic way.

19   I think we have to remember that

20   part of the reason to the extent that this is

21   coming across as a spectrum plan and not a

22   technology plan, is the FCC is fundamentally

1   a spectrum-regulating entity more than it is

2   a technology-regulating entity.

3   So, we are doing things within our

4   authority or proposing ideas within our

5   authority. We're also trying to propose ideas

6   that we think will create pre-conditions in

7   industry for others, you know, the real

8   innovators, people like yourself and others,

9   to develop the next great technologies that

10 will make the spectrum even more useful.

11   But I think in general, it's a

12 balanced plan. We're trying to think about

13 the long term. And so, you know, be

14 interested to get more feedback when you see

15 the plan.

16   CO-CHAIR HATFIELD: Gary.

17   MR. EPSTEIN: John, I notice you

18 used the word network capacity when you talked

19 about shortage in the beginning.

20   Was that really meant to encompass

21 both additional spectrum and more efficient

22 use of the spectrum?

1   Is that kind of -

2   MR. LEIBOVITZ: Yes, yes.

3   MR. EPSTEIN: - how you guys are

4   thinking on that?

5   MR. LEIBOVITZ: Yes, that's

6   correct.

7   MR. EPSTEIN: You didn't only use

8   the term spectrum. You focused on network.

9   I'm just curious about whether that was

10   purposeful.

11   MR. LEIBOVITZ: I tried to frame

12   the problem in terms of network capacity which

13   is what Marty was explaining, and then talking

14   about some of the recommendations as they

15   relate to the FCC in terms of spectrum since

16   that's, I think, you know, what's of most

17   interest to people here today as well as at

18   the FCC.

19   CO-CHAIR HATFIELD: Jennifer.

20   MS. WARREN: John, thanks very much

21   for coming in and sharing those thoughts and

22   points. The question I had was on your

1   mention of the R&D investment support.

2   Can you talk a little bit about

3   that, and then what the incentives will be for

4   the take-up of that, of the technology that

5   the FCC has invested R&D in, how that kind of

6   works?

7   MR. LEIBOVITZ: So, that is one of

8   those recommendations that's a recommendation

9   that's to the rest of the government. It's

10   not necessarily an FCC recommendation.

11   MS. WARREN: Okay.

12   MR. LEIBOVITZ: If you want more

13   details, I'd refer you to the estimable Al

14   Stagg Newman.

15   (Laughter.)

16   MS. WARREN: So, just to follow up

17   real quickly, this isn't an FCC investment.

18   This is you're making recommendation to -

19   MR. LEIBOVITZ: the R&D point was

20   about investment in R&D. There are other

21   aspects of the plan that will speak to

22   creating regulatory and other pre-conditions

1   for new technologies to take root, which needs

2   to happen.

3   You can't just put money on it.

4   You also have to create a sandbox, and grow

5   the sandbox over time.

6   MS. WARREN: Thank you.

7   CO-CHAIR HATFIELD: Gerry, then

8   Michael.

9   MR. SALEMME: John, I just wanted

10   to say that we're really heartened by the fact

11   that the Commission recognizes that beachfront

12   isn't just the lowest of the spectrum

13   frequency beams. I know that from our

14   perspective, the 2.5 beam has worked very well

15   for our 4G deployment. We just launched it in

16   Spain with a 3.6 spectrum.

17   So, you can get, I think, a lot

18   more spectrum that is usable and being able to

19   be applied, which helps address the issue.

20   And Marty who started the whole

21   process here and the father of our whole

22   industry, I know when 1-800 seemed like the

1   farthest we could go, I remember being

2   concerned that 1.9 and PCS was never going to

3   get any propagation that was going to work.

4   And now to see a 4G deployment in 3.6 really,

5   I think, opens a whole plethora of new

6   opportunities that we should take advantage

7   of.

8   (Off the record comments.)

9   MR. SALEMME: Craig still talks

10 about how the old AM radio band is still the

11 most expensive megahertz of all time, because

12 people are fighting for those few radio

13 spectrum licenses at the time paying

14 everything forward.

15   MR. LEIBOVITZ: I think you're

16 right, Gerry. I mean, the only thing I would

17 add is that and one of the things we've been

18 hearing throughout the process, is that

19 technology is allowing us and companies to

20 think more than kind of break outside of just

21 the band-by-band box a little bit too. I

22 mean, all these devices now are multi-band

1   devices.

2   You can combine the benefits of

3   different bands in the user equipment in ways

4   that maximizes the value until you can see,

5   realize complementarities between different

6   bands in new ways.

7   MR. SALEMME: And on licenses, you

8   probably -

9   MR. LEIBOVITZ: And on license,

10   yes.

11   MR. SALEMME: And the use of Wi-Fi

12   is something that was unheard of in almost the

13   antithesis of what a licensed company wanted

14   to do five years ago.

15   MR. LEIBOVITZ: That's right.

16   CO-CHAIR HATFIELD? Michael, did

17   you have something? Did you have a question?

18   MR. CALABRESE: Yes, yes. I'm also

19   heartened that you're, you know, just as Gerry

20   was saying, you're stretching this beyond

21   thinking whether it's licensed or unlicensed

22   just on kind of a siloed or band basis

1   apparently thinking about more ways to do

2   spectrum sharing and opportunistic access.

3   So, we'll really look forward to hearing more

4   about that direction.

5   And I guess in that spirit, I'd

6   like you to ask you to think, you know, you

7   might not have it off the top of your head,

8   but think about what can this community do for

9   you? In other words, what are some of the

10   questions that, you know, because obviously

11   NTIA is thinking about how to use this

12   committee, but I think the FCC as well. What

13   are some of the questions that remain maybe

14   just beyond your horizon or vexing or things

15   that we could perhaps wrestle with going

16   forward to help with the implementation of the

17   whole direction.

18   MR. LEIBOVITZ: That is actually a

19   great question, and I haven't give it enough

20   thought. I will think about it and get back

21   to Anna and others.

22   CO-CHAIR HATFIELD: One final

 1   question.

 2   MR. RAY: It's more of a comment

 3   than much else.

 4   (Off the record comments.)

 5   MR. RAY: But, John, thank you for

 6   the outline. I think we all look forward to

 7   the middle of the coming months and hearing

 8   more details.

 9   I think from a commercial wireless

10   operator perspective, time frames are always

11   a concern here and ten years is a lifetime in

12   this industry which changes almost every

13   quarter, let alone every year. Especially in

14   the commercial wireless space.

15   So, I just remind us all of what's

16   happening in some other part of the world, and

17   one specific large European is just going to

18   auction inside the next couple of months with

19   one over 350 megahertz a spectrum across

20   multiple bands, lower bands, high bands. And

21   other nations around the world are really

22   seizing this opportunity and moving forward

1   with it very aggressively in much faster time

2   frames than we are talking about in this point

3   in time.

4   And so we're looking forward to a

5   plan that we'll talk about near term, as well

6   as some of the longer term opportunities and

7   objectives. And I think it's key that we have

8   that balance because technology can fix some

9   of these issues, but there are near-term

10   problems that need to be addressed too.

11   So, just a reminder for us that we

12   have a lot of work to do and timing is key.

13   MR. LEIBOVITZ: Thanks.

14   CO-CHAIR TRAMONT: First of all,

15   thanks for your time this morning and your

16   thoughtful remarks. And I think I speak for

17   all of us when I say we're thankful the

18   Commission's built a resource to offer people

19   this service and appreciate your willingness

20   to come and share your thoughts this morning.

21   We should also mention that

22   originally we had talked about the possibility

1   of Julie Knapp coming to discuss the scope of

2   commercial and public safety spectrum use.

3   In light of the National Broadband

4   Plan's timing, we thought, John, it would be

5   great. So, Julie will still be on our agenda

6   for a future meeting to address those issues

7   to sort of do the other half of Karl's

8   presentation from the last meeting which

9   discussed federal government use of --

10   So, with that, why don't we go

11   ahead and try to do Karl before the break.

12   We'll talk about IRAC, and then we'll break

13   after Karl's presentation.

14   MR. NEBBIA: And I may need a

15   little help here just calling the screen up,

16   possibly.

17   (Off the record comments.)

18   MR. NEBBIA: First of all, I wanted

19   to thank Bryan and Dale for the opportunity to

20   make this presentation on the Interdepartment

21   Radio Advisory Committee. And we also

22   certainly thank John for coming out today.

 1 It's always important to have an opening act

 2 before the -

 3   (Laughter.)

 4   MR. NEBBIA: But one of the

 5 suggestions I wanted to make for our future

 6 work was this idea of traveling the world for

 7 government and industry meetings with

 8 leadership around the world, and we're all

 9 anxious to see his travel voucher from that

10 trip to the Cayman Islands where I know he

11 spoke to a number of leaders down there.

12   Talking about the IRAC today,

13 first of all I'm going to cover what the IRAC

14 is, who participates in it, what its parts

15 are, and how it operates.

16   I note that for many the IRAC is a

17 great mystery. It's a little bit like the

18 Politburo that we see a lot of older, white-

19 haired men with a little cup of vodka on the

20 table and that's why it gets spilled once in

21 a while at the table.

22   (Laughter.)

1   MR. NEBBIA: But it's actually not

2   quite that mysterious, and the chairman of the

3   IRAC never gets up on the table and does a

4   little dance to show his virility. But,

5   anyway, it is not that mysterious an activity.

6   The IRAC is in fact an advisory

7   body to NTIA. And the important factor there

8   you need to keep in mind is that what that

9   means is they provide advice, that NTIA has

10   the option of taking that advice or not taking

11   that advice. And in reality, we do not always

12   go along with what the IRAC suggests to us.

13   It has been in existence since

14   1922. It's actually the longest existing

15   federal advisory body in the government. It's

16   existed continually since that period.

17   It has undergone different

18   leadership starting with commerce many, many

19   years ago. There were periods of time, in

20   fact, where the FCC chaired the IRAC. There

21   was one incident, for instance, where there

22   was an FCC chairman by the name of Mr. Fly,

 1   who we all know by that name had to have been

 2   an evil individual, and he was actually

 3   accused by the IRA of malfeasance in the

 4   conduct of his duties, and they turned the

 5   IRAC into a small courtroom for a period of

 6   time to analyze whether he was protecting

 7   federal interests or not.

 8   Since that time, the FCC has not

 9   chaired the IRAC. So, anyway, it's an

10   interesting process. There are some records

11   of that hearing and so on.

12   CO-CHAIR TRAMONT: Karl, is it

13   statutory or is it - what created the IRAC?

14   MR. NEBBIA: The IRAC - man, that's

15   a good question. It was started so long ago.

16   I'd have to check into that and get a readout,

17   but it's now, you know, it's an advisory body

18   to NTIA, and it's written its charter as part

19   of our rules, so on and so on.

20   The work that they do there is

21   considered executive branch pre-decisional.

22   So for the most part, the documentation that

1   we have is not releaseable. We will consider

2   specific cases and where the documentation is

3   not actually showing pre-decisional activity

4   and so on.

5   We also, just so everybody knows,

6   we are open to non-federal presentations.

7   There is a procedure for that. We established

8   that, I think, back as the outcome of Janice

9   Obuchowski's spectrum study. That was one of

10   the activities that came from that.

11   However, over the years what we

12   found, most cases that we had such

13   presentations, companies wanted to come in and

14   make sales presentations. And for that

15   reason, we had to instruct them and say this

16   is a spectrum management body, we're here to

17   look at policy and procedures for spectrum

18   management.

19   So, we have kind of discouraged

20   that mode, but we have had many other good

21   briefings.

22   It is broken up into subcommittees

1   which have been in existence for a long time,

2   and they continue their work. The ad hoc

3   groups are set up on individual topics. And

4   the nature of the body itself, it is a

5   collegial group. We do try to reach consensus

6   within the group. It does not always happen.

7   And the folks that are in this are really

8   career spectrum management people.

9   And that has both good and bad, I

10   think, aspects to it because it is important

11   to get new policy ideas. And when oftentimes

12   we've grown up from within the process, that

13   sometimes becomes a challenge for us.

14   And I should also say that for

15   most of the agencies that are represented,

16   their offices come from their CIO's office

17   within the agency. So, spectrum management

18   for most of the agencies is a support function

19   and can be a support function that in some

20   cases does not probably get the notice that it

21   should. But many of the agencies, I think,

22   are renewing their efforts to raise the

1   visibility of that activity.

2   This is our 1985 Microsoft version

3   of a picture. I think one of my predecessors

4   created this, and only the names have changed.

5   The Treasury representative is still a little

6   bit offended by the fact that the Coast Guard

7   representative has been writing on the back of

8   his head for a period of time.

9   (Laughter.)

10   MR. NEBBIA: They're simulated on

11   the table, but I think it may have been

12   throwing back and forth. This one has

13   probably outlived its time, but you'll see the

14   NTIA as the chair of the IRAC with the FCC as

15   the liaison to it to present private sector

16   and commercial interests.

17   The agencies in fact here have

18   changed over the years. BBG, anybody guess?

19   MS. WARREN: Broadcasting Board of

20   Governors.

21   MR. NEBBIA: Broadcasting Board of

22   Governors. Very good. They've actually

1 stayed there for many years. They just change

2 their name every couple years. It was USIA

3 for a while and IBB, I think.

4   But these agencies do change from

5 time to time. I think HHS actually was

6 eliminated a few years ago as part of the

7 Politburo activities.

8   (Laughter.)

9   CO-CHAIR TRAMONT: Any criteria

10 who's on so, for example, Army, Navy, Coast

11 Guard as well as Air Force, I mean, how do you

12 decide when it's sub-department level and how

13 that works?

14   MR. NEBBIA: There was not an

15 established gating criteria. In fact, we've

16 had many debates over the years about the

17 individual departments within the Department

18 of Defense getting represented, why they don't

19 have a single representative and that sort of

20 thing.

21   I think in general we look to

22 these as the agencies that have the major

 1   spectrum use. Sometimes it's not major in an

 2   overall context, but, for instance, BBG has

 3   the primary government broadcasting activity.

 4   Now, an interesting part, for

 5   instance, Coast Guard is actually part of DHS,

 6   but they're the ones who really carry the

 7   knowledge about maritime, so we've kept them

 8   even when DHS was formed and had its own

 9   representation.

10   So, there's not a clear gating

11   function, but we feel like we've covered most

12   the agencies. There's currently 19.

13   MR. ROSSTON: So, Karl, there's no

14   NSA or is that gentleman between the

15   Agriculture and Interior actually --

16   (Off the record comments.)

17   MR. NEBBIA: NSA is actually not a

18   representative in the IRAC. They have

19   representatives on other subcommittees that

20   they participate in. But generally in the

21   ongoing policy work, they are not one of the

22   primary participants.

 1   If, on the other hand, they in

 2   getting the documentation were to send some

 3   input in, we would certainly consider that.

 4   MS. WARREN: Is the Postal Service

 5   an active participant?

 6   MR. NEBBIA: The US Postal Service

 7   is actually a very active participant. They

 8   come in from Nashville, I think, several times

 9   a week, actually, for different IRAC meetings.

10   CO-CHAIR TRAMONT: That's for their

11   radio feed, I presume?

12   MR. NEBBIA: The Postal Service has

13   a variety of different activities. Certainly

14   they do have their fleet of vehicles and so

15   on. They also have investigative

16   responsibilities. So, they have other law

17   enforcement activities that they -

18   (Off the record comments.)

19   MR. NEBBIA: First of all I wanted

20   just to note here we do have an ongoing

21   agreement with the FCC on spectrum management.

22   I'm not going to talk necessarily about the

1   first two items, but I think the last two

2   really impact the IRAC here.

3   And that is we make decisions,

4   spectrum decisions. And that can be the

5   writing of an NOI, it can be a final outcome

6   on an R&O, it can be a decision on NTIA's part

7   to change our rules.

8   We actually have an agreement

9   between us to allow 15 days to consider the

10   draft of that change and provide comments back

11   to one another. So, this is in a non-public

12   discussion where we provide that feedback on

13   various documents and outcomes, and I'll talk

14   about that briefly in a couple minutes.

15   But ultimately given the

16   differences in our authority and the fact that

17   the spectrum, for instance, is not broken up

18   by law, that's by agreement between us. We

19   don't have veto authority over each other's

20   decisions, but obviously this working process

21   has to be collegial. Otherwise, you know,

22   everything kind of begins to break down.

 1   But once again in that, the IRAC

 2   activities are very much involved in those

 3   decisions.

 4   For the main committee right now,

 5   Ed Davison is the chair of that group.

 6   Actually, most of the work that goes on within

 7   there deals with FCC rulemakings, drafts of

 8   different stages in that rulemaking process,

 9   sometimes waivers and so on. Deals also with

10   allocations. And then to a certain extent,

11   changes within our manual for federal

12   processes and policies. But most of the

13   activity I would say in the last 20 years has

14   been focused on Commission rulemakings.

15   Now, in talking about that, as you

16   know, you know the Commission's processes. It

17   can run the whole gamut of different stages.

18   And if in fact that work runs through all

19   those stages, essentially what we have between

20   NTIA and the FCC is this process of sending

21   drafts, giving us 15 days to respond, us

22   providing input back. And that can happen,

1   actually, at every one of these stages so that

2   it always has to be built in to that decision

3   process.

4   I can't say that in every case the

5   Commission gives us that time. In some cases

6   they'll say there's some urgency here that

7   we're going to need to cut the time short.

8   Other times we'll come back in just a couple

9   days and say we really don't have any concerns

10   and they can move it forward.

11   So, there's no necessarily set

12   delay in all these different stages. But when

13   NTIA gets that document, what we immediately

14   do is electronically farm it to all the IRAC

15   participants. They are given deadlines for

16   responses. We hold to those deadlines.

17   And overall since, I'd say, the

18   last five years, we are consistently under

19   that 15-day response time.

20   Yes, sir.

21   MR. GURSS: A quick question. In

22   the case of a FCC item that's going in an open

1   meeting, does your 15 days end before the

2   sunshine period of the FCC or where in that

3   process is that 15-day period?

4   MR. NEBBIA: That certainly is the

5   goal. They like to get our comments before

6   they get into that period.

7   The place that we probably run

8   into the most conflict with that is of course

9   they're trying to move it through their review

10   process, and we are looking at it kind of at

11   the same time, and those deadlines will come

12   up. And that's generally when Julie Knapp or

13   somebody from OET will contact us to say we've

14   got to move this one faster than normal. And

15   we try to accommodate that.

16   CO-CHAIR TRAMONT: I think that

17   generally they try to get it processed in

18   before it hits the floor.

19   MR. NEBBIA: That's right.

20   CO-CHAIR TRAMONT: So, the goal is

21   to get it before the three-week out date if at

22   all possible.

1   MR. NEBBIA: Right.

2   Okay. This is the actual

3   organization of the IRAC. And there is a main

4   body, once again, that has 19 members. That

5   number of members does not necessarily control

6   how many member agencies there are in these

7   other briefs. But let me just run through

8   them quickly, and then I'm going to focus on

9   two of them.

10   The Space Systems subcommittee

11   looks at all the incoming messages and so on,

12   on coordination of space systems.

13   The Emergency Planning

14   subcommittee right now is dealing partly with

15   prioritization of emergency communications

16   within the government, and to a great extent

17   within the activities moving toward

18   establishing activities within the government

19   agencies, and then supporting things like ESF

20   2 and that sort of activity.

21   The Spectrum Planning

22   subcommittee, I will get to that in a little

1   bit more detail in a minute.

2   The Technical subcommittee has

3   dealt primarily with standards for rules

4   affected federal government systems. They

5   also help us if we're going to develop

6   analytical techniques and we want the IRAC's

7   input. That would be where that goes on.

8   The Radio Conference subcommittee,

9   a number of you have been involved in the

10   outcomes of that as those outputs are shared

11   through NTIA over to the Commission in

12   preparation for world radio conferences.

13   We do some preparation in there

14   for plenipots and the other aspects of the

15   ITU. A little bit of the radio ITU-R study

16   work, but that's generally done pretty much

17   directly within the State Department's ITAC

18   process.

19   And last is the Frequency

20   Assignment subcommittee, and I will talk about

21   that in more detail.

22   These are the current ad hoc

 1   groups. 206 pretty much just closed out

 2   providing work implementation concepts back to

 3   NTIA. We have forwarded them over to the

 4   Commission, so that's forward 2007. These

 5   others are ongoing activities that are still

 6   very much underway.

 7   For your information, here are the

 8   chairs of those groups and their contact

 9   information. So, please feel free if you

10   would like to chat with them about how they

11   operate or you have questions for them or you,

12   for some reason, know that something you're

13   interested in is in one of those groups.

14   Now, I wanted to touch on two of

15   the groups particularly. First, the Spectrum

16   Planning subcommittee. The main task of this

17   group is to perform what we call systems

18   reviews, and to, in the end, provide spectrum

19   certification for new systems. And all this

20   comes under the OMB Circular A-11 that

21   requires this certification before the

22   agencies spend money on major systems.

1   Now, one of the things I think

2   that's critical here is that there is not a

3   definition of major systems. It's somewhat in

4   the eyes of the beholder. Most of the

5   agencies, I think, all kind of know them when

6   they see them, and we do get those. Once in

7   a while we'll find one we're hearing about

8   somewhere that we have to ask people and make

9   sure it gets submitted.

10   The other aspect of it is based on

11   OMB Circular A-11, there's actually no hook in

12   the budget mechanism that puts an agency in a

13   position where they basically have to say

14   here's my spectrum certification, before OMB

15   gives them the money.

16   So, that's one of the challenges

17   of our process. NTIA does not control that

18   money. And at this point, there has never

19   been that hook in the process.

20   But mostly in our efforts in

21   performing an analysis of them, we're looking

22   to make sure they're in the correct bands,

1   that they're using the standards that we have

2   accepted. We're looking for compatibility

3   issues. And ultimately NTIA signs the

4   spectrum certification that comes out of these

5   groups.

6   Between the process of

7   straightening out the data that we get in,

8   analyzing it, drafting a response and then

9   working it through the committee, they're

10   generally two to four months. Some of them

11   where there's a real conflict agencies, can

12   take longer than that to resolve, but it's

13   generally because there is a conflict between

14   the agencies about what's being done.

15   And you may consider it similar to

16   the Commission's authorization process. The

17   Commission is very active in this, once again,

18   in their liaison capacity.

19   The last thing I want to talk

20   about is the Frequency Assignment subcommittee

21   which deals with the actual what you would

22   think of as licensing process from the

 1   government side, and this is the assigning of

 2   specific frequencies. It operates on an

 3   electronic basis where requests are submitted,

 4   they're processed through a daily agenda that

 5   goes out to the agencies, and then they're

 6   giving a nine-working-day period to respond to

 7   those inputs.

 8   That nine working days applies to

 9   whether it's a non-federal license that has

10   been shared by the Commission because it's in

11   a shared band of some sort or it's in a band

12   that's allocated to federal agencies or it's

13   a government assignment, it doesn't matter,

14   the nine days applies.

15   Down here I have listed if you

16   have a non-federal system that you're working

17   through a license, you know it has to be sent

18   to the Commission because it's in a shared

19   band. The first website here actually would

20   report the status of your submission so you

21   will know where it is in that nine-day period

22   and any result that comes out of that.

1   Now, you have to understand at the

2   end of that nine-day period, that's when the

3   agencies have given their responses. It's not

4   necessarily the end of the process, but they

5   will have in the cases of a non-federal

6   assignment, they will at that point have

7   responded to the FCC and said there's a

8   problem here or you're free to move ahead,

9   that sort of thing.

10   At that point, it's the

11   Commission's responsibility then to take it

12   back to the perspective licensee. At that

13   point, NTIA waits for responses from the

14   Commission.

15   In all of this, as I said, these

16   are circulated electronically. The agencies

17   basically vote on the requirement basically

18   saying we're okay with it or we're not okay

19   with it. A no vote means that they're okay

20   with it and it's going to move through the

21   process.

22   This is a pretty demanding effort

1   for both NTIA - as you see, we have about 350

2   to 400 come through per day. Now, many of

3   these are renewals of existing ones, do not

4   require a lot of work. But other ones that

5   are new require one of our staff members to go

6   over in detail to make sure that the data

7   looks correct and that it's going to go into

8   our database well.

9   This last one here was created

10   fairly recently, this last website, because we

11   had a number of applications coming in, in, I

12   think, the 960 to 1215 band for non-federal

13   aviation-oriented systems and we wanted those

14   folks to know where they were in that process.

15   Now, the Commission actually

16   participates in the FAS as a member, because

17   they are a federal agency. They have some

18   assignments that we have to grant. That's

19   where we tell them, sorry, no can do, you

20   know.

21   But in reality, their main

22   responsibilities in the FAS are still as a

 1   liaison on behalf of the private sector.

 2   CO-CHAIR TRAMONT: Karl, what's

 3   that 8500 number?

 4   MR. NEBBIA: That 8500 number

 5   represents the number of non-federal licenses

 6   that are coordinated with us during the year.

 7   CO-CHAIR TRAMONT: A Year.

 8   MR. NEBBIA: Yes, yes. So, that

 9   brings me - yes, sir.

10   MR. DONOVAN: Just one question

11   either in terms of the Spectrum Planning

12   subcommittee or the Frequency Assignment

13   subcommittee.

14   Is there in either subcommittee,

15   sort of a systematic approach as to usage

16   rates amongst the federal entities that are

17   either requesting an allocation or requesting

18   a frequency?

19   MR. NEBBIA: Well, first of all, in

20   either of those bodies - well, first of all in

21   the Spectrum Planning subcommittee they're

22   actually requesting spectrum certification.

 1   MR. DONOVAN: Correct.

 2   MR. NEBBIA: Never requesting

 3   allocation. That's done on a policy level.

 4   Okay. And then on the assignments, they - and

 5   I'm losing my train of thought on your

 6   question. Sorry.

 7   MR. DONOVAN: Bottom line is if I'm

 8   the Coast Guard and I say look at, okay, let's

 9   get some equipment certification or you do a

10   frequency assignment -

11   MR. NEBBIA: Right.

12   MR. DONOVAN: - is there any sort

13   of systematic follow-up not only in use for

14   the Coast Guard, but amongst all federal

15   agencies whether or not they're in fact using

16   that and the usage rates --

17   MR. NEBBIA: Sure.

18   MR. DONOVAN: - of the federal

19   government on those frequencies? Does IRAC

20   touch that at all?

21   MR. NEBBIA: Yes. There is not a -

22   we have a five-year review for the frequency

 1   assignments that they have to come back and

 2   say we still want this.

 3   MR. DONOVAN: Right.

 4   MR. NEBBIA: On the Spectrum

 5   Planning subcommittee if they then come back

 6   and don't implement that system, it doesn't

 7   really alter - it's not like we've set

 8   something aside through that process. We've

 9   merely given them the go-ahead to develop in

10   that band. So, that process doesn't commit

11   spectrum, which we then need to know are you

12   not using it because we want to get it back.

13   And in fact the history of the

14   federal government has been to consistently

15   try to build systems within the existing

16   spectrum that they have sharing with existing

17   users that are in that environment as opposed

18   to asking for an additional amount.

19   Now, when it comes to the

20   assignments themselves, we have some

21   measurement data that you could say at least

22   validates use rates in certain bands, but once

1   again I think the issue of how well

2   measurements perform that is kind of unclear.

3   But otherwise, I mean, these

4   systems operate across wide parts of the

5   spectrum, certainly, but they're very varied

6   in the types of applications. Some of them

7   are passive.

8   So, that would be a very

9   challenging activity for us to actually be

10   able to monitor the usage rates. And I think

11   to a great extent though, we have a good sense

12   of what those usage rates are.

13   For instance, if the FAA is

14   putting in an air traffic control radar

15   outside of the Atlanta airport, that system is

16   going to be the basis for brining in aircraft.

17   It's going to be on all the time at that

18   location.

19   If you're talking about military

20   training systems, you know it's going to be a

21   sporadic activity, and that may offer some

22   options, and so on.

 1   So, I think we think of it more in

 2   those general terms more so than knowing the

 3   specific use level.

 4   MR. DONOVAN: So, essentially it's

 5   based on the requests of the individual entity

 6   wanting to develop a new system. It's not how

 7   often that system gets used or ultimately

 8   phased out or -

 9   MR. NEBBIA: That's -

10   MR. DONOVAN: How do you double-

11   check on that?

12   MR. NEBBIA: Well, they certainly

13   through the five-year review process if they

14   actually have an assignment - and once again

15   it's only the assignment that establishes some

16   hindrance for somebody else to operate. So,

17   that's where we focus on that.

18   But once again in our process, it

19   is in many ways a self-certified process. We

20   count on them to provide us truthful

21   information about their operation. So, that's

22   more or less what we've got to do.

1   CO-CHAIR HATFIELD: Karl, one thing

2   that's not clear is how much is decentralized

3   versus centralized here, at least centralized

4   electronically, in terms of individual

5   agencies?

6   How much have you delegated them

7   the right to make decisions on a more dynamic

8   basis within a test range or something like

9   that?

10   MR. NEBBIA: Sure.

11   CO-CHAIR HATFIELD: I mean, what

12   has to come back here and what do you allow

13   them to do when centralizing?

14   MR. NEBBIA: Well, first of all I

15   should mention that there is a small number of

16   bands that are mentioned under what we call

17   the Aviation Assignment Group, the AAG, or the

18   Military Assignment Group. Very small number

19   of bands where in fact in that case, the FAA

20   or somebody from DoD actually chairs that

21   subactivity and resolve issues in that band

22   specifically.

1   And those bands are listed in the

2   NTIA manual. There's a small series of them.

3   Not too many of them up in the ranges that

4   we've talked about most recently.

5   Now, other assignments, sometimes

6   an agency will get an assignment for a number

7   of channels within an area, a statewide

8   assignment or something along that line. And

9   certainly at a test range, they're going to

10   get a number of channels at that test range

11   that they are permitted to operate at any time

12   they want to operate.

13   So, at that point we've given them

14   the assignments in that range for that

15   location. And at that point, it becomes their

16   daily scheduling and activity and so on. If

17   they need more channels in their area, they'll

18   come back to us and so on.

19   So, they have, once again,

20   somebody - it's like if you have - you give a

21   license to a cell operator. You don't come

22   back and say well, can we turn this person on

1   or that person on, you know, they get the

2   option to work within it.

3   Now, we really do not do much in

4   terms of what most would think of in terms of

5   cell sort of licensing where they get a

6   significant amount of contiguous spectrum and

7   a designated area to operate in.

8   When somebody comes in with a new

9   frequency assignment, the others that already

10   have assignments are doing a technical

11   analysis to see how close those things are

12   fitting together.

13   If what the new person or new

14   group proposes doesn't bother them, they give

15   the thumbs up. If they think there's going to

16   be an interference impact, they give the

17   thumbs down.

18   So, we don't generally manage

19   based on blocks of spectrum, large areas. We

20   base on fitting the systems technically as

21   close as we can get them together.

22   We got a lot of hands up, so -

 1   CO-CHAIR HATFIELD: I'm a little

 2   concerned about timing, but we probably need

 3   to go ahead. Let's do five minutes more

 4   quickly. I haven't been paying attention who

 5   raised their hand first.

 6   MR. CALABRESE: I think I'm just

 7   going to follow up on what you did. Quickly,

 8   just I'm wondering how geographically specific

 9   are the assignments. And if it's a bigger

10   area does that mean there are clients that

11   want these 21 small things that add up to a

12   larger area, or does it vary?

13   And then also begin to say a

14   little bit more quickly about the five-year

15   review process in terms of whether you're

16   getting information on what's actually in use.

17   MR. NEBBIA: Well, the approach on

18   the assignment with respect to areas covered

19   is based primarily on the kind of assignment

20   it is. So, if it's a fixed location

21   assignment, whether that's a radar, a non-

22   moving radar or a fixed point-to-point link,

 1   that's they're given the authority based on

 2   the specific characteristics they give us and

 3   that specific location.

 4   Others, on the other hand, they

 5   have mobile requirements. For instance, the

 6   FBI needs for agents to be able to take their

 7   radio at times, hop on an airplane as part of

 8   the following of whoever they're following,

 9   get off an airplane in another town and be

10   able to talk again.

11   So, the setting of channels and so

12   on for them has to involve a lot more

13   mobility. So, they're given a set of channels

14   that they operate on and, in some cases, a

15   nationwide assignment to do that. So, just

16   depends on the type of service that we're

17   dealing with.

18   And certainly in the five-year

19   review, we do initiate that with each

20   assignment. We do expect a response. And if

21   we don't get a response, we send out a letter

22   to the agencies notifying them that that

 1   assignment is being pulled out of the database

 2   and their authorization is being taken away.

 3   Each of these agencies does pay

 4   fees to support NTIA's Spectrum Management

 5   Office. So, 80 percent of our budget every

 6   year in my office actually comes in through

 7   agency fees. That amounts to somewhere around

 8    $120 per assignment since it's essentially

 9   broken down per assignment in our database.

10   And that's renewed every October.

11   CO-CHAIR HATFIELD: Gerry.

12   MR. SALEMME: Yes, so the spectrum

13   managers within the agencies, they sort of

14   report back to you via the GMF. So, you're

15   keeping track what the GMF -

16   MR. NEBBIA: Yes, we maintain the

17   GMF. They submit their requests, we put them

18   into this daily agenda thing that distributes

19   them to everybody. They then respond

20   electronically whether up or down on it, any

21   particular concerns or comments, but then we

22   in the end maintain the database.

 1   And that database is available to

 2   all of those participants. It has been made

 3   available to other members of the government

 4   who need to understand what's going on.

 5   Certainly if my boss were to ask for it, he

 6   would get any access he needs to understanding

 7   there's nothing held from him.

 8   CO-CHAIR HATFIELD: Gary.

 9   MR. EPSTEIN: First, Karl, thanks.

10   That was terrific. You've removed some of the

11   mystery of it. And feel free, and this is an

12   unfair question, you as probably pre-eminent

13   spectrum guy in the government, is this system

14   fundamentally broken?

15   We're all nibbling around the

16   edges of this. We're asking is it used

17   correctly? How do you know whether it's used?

18   Is this broken or should we have a top-to-

19   bottom review of it? Or in your view as the

20   expert in the government, is it pretty much

21   okay or is it impossible to change or all of

22   the above?

1   MR. NEBBIA: I think the biggest

2   challenge for us is we need and we're in the

3   midst of taking some major steps forward on

4   our data capabilities. We're working on a

5   major upgrade to our system, and I think

6   that's an important component of it.

7   We have noted a number of times

8   that we believe that it's critical in the

9   spectrum management business, to have a level

10   of policymaking input from the agencies. And

11   within the last few years, we created a group

12   called the Policy and Plans Steering Group

13   that when we need executive level input, that

14   we're able to convene that group and to work

15   within that group.

16   So that has, I think, met some of

17   the requirement for that kind of invariable or

18   inevitable movement toward once again folks

19   whose main job it is to protect what they

20   have, and this brings in some other thinking.

21   To be honest with you, I am amazed

22   at what the federal government does in the

1   spectrum that it has. There is a little bit

2   more at times some black magic involved.

3   Because, for instance, when we began to move

4   out of the 1710 to 7055 band, we had

5   nationwide mobile operations in there. We had

6   airborne telemetry systems. We had satellite

7   - or satellite activities is the next band up,

8   but we had fixed microwave links. Some of

9   them transportable for the military.

10   And all these things are just kind

11   of operating together. The agencies are

12   talking together, communicating when there are

13   issues and resolving them.

14   So, we do a lot of things within

15   bands that the private sector would never do.

16   They would never put those types of systems

17   together.

18   Certainly as we look toward better

19   sharing in the future, we're going to have to

20   deal with some of the possibilities of

21   bringing either federal operations into some

22   of the non-federal bands and sharing in a way

 1   they're not used to, or vice-versa.

 2   So, I would not characterize it

 3   that way, but -

 4   CO-CHAIR HATFIELD: I think I'm

 5   getting worried about the time here. So,

 6   unfortunately, I think we probably ought to

 7   cut this off. I'll be the bad guy.

 8   MR. DONOVAN: Bob has -

 9   MR. GURSS: I want to ask one more

10   question. I beg your indulgence.

11   MR. NEBBIA: And then Jennifer, but

12   she'll give you a pat on the back.

13   MR. GURSS: Is there any mechanism

14   in what you've described where an applicant

15   has to demonstrate that the channels they

16   already have assigned or an access to are

17   insufficient to meet the requirements that

18   they are seeking?

19   MR. NEBBIA: Well, I think

20   certainly if there are - you're talking about

21   the same applicant coming back and saying I

22   have five channels now, I really need ten.

 1   That primarily applies within our

 2   land mobile bands, which once again everybody

 3   has to keep in mind are a fairly small piece

 4   of spectrum.

 5   But in those cases, we're dealing

 6   mostly with trunk mobile radios at this point,

 7   and we do ask them how many users per channel

 8   they have and that sort of thing.

 9   Ultimately we still have to get

10   back to relying on them for their input and

11   the statement of their need.

12   MR. GURSS: Thank you.

13   MS. WARREN: Bryan said I could say

14   one thing.

15   As a company that falls in some of

16   the 8500 FCC applications that get sent over

17   to NTIA, the FABs, I can't comment as much on

18   the others, but the turnaround time that they

19   s how and the questions and the flexibility is

20   really pretty good. I mean, it's an

21   impressive - This group is pretty impressive.

22   So, it's not a compliment to you.

1   It's a compliment to Tom Woods.

2   MR. NEBBIA: Okay. Tom Woods.

3   Good. Good. No question there.

4   CO-CHAIR HATFIELD: Karl, thank you

5   so much. This has been extremely helpful.

6   Why don't we do a five-minute break now and

7   then come back and get the subcommittee

8   reports then.

9   (Whereupon, the meeting went off

10   the record at 10:30 a.m. for a brief recess,

11   and resumed at 10:39 a.m.)

12   CO-CHAIR TRAMONT: If everybody

13   could take their seats, we'll go ahead and get

14   underway.

15   Okay. So, just a quick note on

16   sort of processing how we're proceeding for

17   the rest of the morning, the four

18   subcommittees will make their presentations.

19   Two of the subcommittees have full drafts.

20   They're available on the table out front.

21   We've asked the committee chairs

22   to review the contents of those drafts. Our

 1   hopeful plan is that after a discussion of the

 2   drafts here, we will then adopt at the next

 3   open meeting, final reports from those two

 4   committees. So, there will be a chance for

 5   that full committee to have input into the

 6   drafts that you've received, as well as any

 7   members of the public that want to comment on

 8   those individual drafts.

 9   For the two subcommittees that

10   don't have drafts yet, we're going to hope to

11   try and move to draft quickly in each case,

12   put those on the website and give them the

13   full committee for comment and drive at least

14   ideally both, potentially one, to a full vote

15   at the next meeting as well.

16   So, that's the process for the

17   four existing committees. And you'll also

18   note that there's a placeholder on the

19   schedule for the path forward, and our goal is

20   to create two new subcommittees that will

21   begin their work immediately on additional

22   topics culling from the last list of topics

 1   that was presented at the initial meeting, as

 2   well as some of the things that were raised

 3   this morning by Anna, and any other topics

 4   that people are interested in.

 5   So, that's the sort of macro

 6   overview on what we're trying to accomplish

 7   for the rest of our time today. And with

 8   that, why don't we go ahead and move to Mark

 9   and Jennifer who will present their report on

10   the Spectrum Inventory.

11   MR. CROSBY: Thank you. First

12   things first. You know these things are

13   collaborative efforts, and the Spectrum

14   Inventory Working Group has been blessed with

15   some very active and very smart people;

16   Jennifer Warren, Bob Gurss, Gary Epstein, Mark

17   McHenry, Darrin Mylet, Marty Cooper, Michael

18   Calabrese, and at that propicious moment, Karl

19   Nebbia, because I got a three-page e-mail from

20   him and I'm thinking what I'm supposed to do

21   with this?

22   (Laughter.)

1   MR. CROSBY: I did not hit the

2   delete key. I saved it as, okay, this is KN's

3   input, so this was great. And Byron Barker

4   and Karl participated in several of our calls.

5   I don't want to go through this

6   document. You can see that we've had some

7   very healthy discussions, a lot of

8   participation, because this is Version 8.

9   CO-CHAIR TRAMONT: I noticed that.

10   MR. CROSBY: And I wasn't bold

11   enough to say it was final, but Version 8

12   because I fully expect to have very helpful

13   input from the full committee and the public.

14   And so, I thought to just label it Version 8.

15   We obviously do very brief

16   executive summary support at this initiative,

17   of course. We have obviously as evidenced in

18   the text of the document, do not believe that

19   spectrum reallocation is the only solution, so

20   we're very, very strongly proponents of

21   advancing technologies, all kinds of

22   technologies to get to the objective of

 1   accommodating the wireless needs of this

 2   country.

 3   We don't think 500 is enough

 4   necessarily. We think it's going to be a lot

 5   more than so, so technology improvement is an

 6   absolute must.

 7   We talk about funding. We have

 8   some conclusions in here. I think one of the

 9   other things - we had some, again, healthy

10   discussions on the level in the capacity and

11   the benefits of spectrum benefits, that is the

12   discussions are in Attachment B. And at some

13   point I think it was Karl and I said well, are

14   you going to help us with the actual fields

15   that are going to be in the Spectrum

16   Inventory?

17   And so we actually took a couple

18   shots at some of the - we were very careful

19   with this. This is a recommendation. It's an

20   illustrative list of potential elements that

21   would be fields in the Spectrum Inventory, and

22   that is contained in Attachment A.

1   This has been a lot of fun work.

2   I don't know whether we're quite done, but

3   Version 8 should be - we should be running on

4   empty at this point. And at this point, I'll

5   ask for the comments and other things from the

6   great members of this working group.

7   Jennifer and Marty and -

8   CO-CHAIR TRAMONT: Comments or

9   questions from the floor?

10   David?

11   MR. DONOVAN: Just one quick

12   question in terms of inventory, and I - this

13   is terrific work, but I haven't read it

14   thoroughly, but what is your approach to

15   suggestions about inventory in non-licensed

16   uses such as unlicensed operations?

17   I mean, certainly they're going to

18   be out there, somebody is going to be using

19   it. How do you measure those usage?

20   MR. CROSBY: Anybody on the - well,

21   we had that discussion, David.

22   MR. DONOVAN: Right.

1   MR. CROSBY: And you can't do - you

2   have to do monitoring at some point, I think,

3   but Jennifer and those - it is an issue,

4   obviously, because all you have is certified

5   pieces of equipment.

6   MR. DONOVAN: Right.

7   MR. CROSBY: That's all you have.

8   MR. COOPER: To put it bluntly,

9   David, we did not address the issue of

10   measuring unlicensed -

11   MR. DONOVAN: Okay. Could one

12   measure it in terms of sort of number of

13   devices sold or some type of marketing

14   analysis measuring usage in terms of whether

15   the market is providing those devices?

16   In other words, if I have an

17   unlicensed band and suddenly for whatever

18   reason devices aren't being sold, then can one

19   assume that that spectrum is not being used,

20   or can you make some type of marketing

21   analysis?

22   MR. COOPER: The only measurement

 1   that I know of is it's a pure marketing

 2   measure.

 3   MR. DONOVAN: Right.

 4   MR. COOPER: What kind of

 5   experience do users get when they try to use

 6   the unlicensed -- and I would suggest at this

 7   moment that a very positive experience is very

 8   seldom at least with wi-fi -- that people run

 9   into in interference issues.

10   CO-CHAIR TRAMONT: Marty, can we

11   ask of you to pull the mic closer? I

12   apologize, but just for purposes of the

13   record.

14   MR. DONOVAN: I guess my question

15   is certainly it's not a perfect condition. I

16   mean I could go buy a device that's, you

17   know, whether it's a garage door opener or

18   another type of wi-spy. Whether I use it or

19   not I agree, you know, you can't - it's tough

20   getting at that. But at least in terms of

21   usage if you look at marketing data, you could

22   get a sense as to whether or not the spectrum

1   - at least there's one - and I would argue how

2   important it is as to whether or not that

3   spectrum is being used for the purposes for

4   which that spectrum was either set aside or

5   shared or what have you.

6   CO-CHAIR TRAMONT: And you could

7   get a sense of the types of use, right?

8   MR. DONOVAN: And that shows the

9   types of use, right.

10   MS. WARREN: Can I point out that

11   at least under the technical use information

12   in Attachment A, there is at least number and

13   type of authorized devices listed there.

14   MR. DONOVAN: Okay.

15   MS. WARREN: So, that was a

16   recommendation. That's not limited to

17   unlicensed or license.

18   MR. DONOVAN: Okay. Well, that's a

19   fair point.

20   CO-CHAIR HATFIELD: Isn't this an

21   area, classic area where you may want to do

22   some spot checking with actual measurements?

 1   I mean, you've talked about that as a

 2   possibility selected use, and I think that

 3   would probably - that's where you would almost

 4   need it most because you have the least

 5   information that's available in a database.

 6   MR. EPSTEIN: In Appendix B where

 7   we talk about spot use of measurement, we

 8   explicitly call out exactly, Dale, what you

 9   just said. If you look at the first bullet in

10   Appendix B, it talks about unlicensed.

11   MS. WARREN: That's right.

12   MR. EPSTEIN: And it was meant

13   just for that, you know. We didn't know how

14   to do it.

15   I like Dave's idea. I mean, we

16   could drop a footnote or if it was the

17   consensus of the working of the group that we

18   could say look, we may need some sort of

19   surrogate for unlicensed. We don't know

20   really how accurate it would be, but, I mean,

21   it's a good suggestion. We could put it in

22   the report.

 1   But the question about monitoring,

 2   which probably engendered the most discussion

 3   of all in all of our eight deliberations,

 4   wound up in Appendix B. And the unlicensed

 5   issue at least was called out there for spot

 6   measuring purposes.

 7   MS. COOPER: I wonder if we could

 8   just mention that there exists now in the

 9   marketplace, a means for measuring on a

10   continuing basis how people are using the

11   spectrum.

12   And I'll give you this example: In

13   the cellular telephony area, there are people

14   who monitor the places and times when the

15   systems went out of capacity. There are

16   public service organizations that will tell

17   you what part of New York City you will have

18   trouble talking on at what time of day, and I

19   don't know of any other system that is better

20   than that.

21   Going on doing spot checking is

22   not going to tell you those kind of things, so

 1   there are mechanisms for doing that. And the

 2   thing that is important with Wi-Fi, is that's

 3   a number of devices, but it is in fact what

 4   the experience is.

 5   Is somebody actually trying to use

 6   a Wi-Fi at some point and failing?

 7   CO-CHAIR HATFIELD: Or what is the

 8   overall level of interference? I mean, Wi-Fi

 9   is so intensely used that the interference

10   begins to look sort of noise-like, I think.

11   And what you're looking at is then what sort

12   of interference levels are you getting in the

13   aggregate in a particular band, and it seems

14   to me that's fairly important information to

15   get.

16   MR. COOPER: Absolutely. But what

17   I'm suggesting is that polling users might be

18   a better way of determining that, Dale, than

19   trying to do ten - just ask me how I did -

20   CO-CHAIR HATFIELD: This is

21   probably not a good place to have a detailed

22   technical debate, but the user experience

 1 depends on a lot of things. When things slow

 2 down, I don't know whether it's because it's

 3 a server that's delivering the content to me.

 4 It's the network of the - my ISPs network or

 5 it's because I have a PC that's, like I do,

 6 that's so old it's having trouble keeping up

 7 with what I'm getting.

 8   And that's the reason I think you

 9 have to be very careful relying just on user

10 experience. And I think from the scientific

11 standpoint you'd like to isolate those. And

12 one of the things you want to isolate is how

13 much of this is due to spectrum congestion

14 problems versus congestion in the backbone

15 network or someplace else.

16   CO-CHAIR TRAMONT: It seems to me

17 that David's point raises two different public

18 policy concerns.

19   One is, is it being so heavily

20 used and congested that it warrants additional

21 spectrum, what have you.

22   The other is, is it being so

 1   underused that it should be re-purposed? And

 2   the user experience will not capture the

 3   underused. And so spot checks and sales are

 4   a way to get the underuse problem to the

 5   extent they exist at all.

 6   DR. KAHN: I think, though, there

 7   may be another opportunity underlying this if

 8   we could figure out how to harness it, which

 9   is sort of kind of a riff off what Marty was

10   saying. Two things. One, it may not need to

11   be a government thing, that there are other

12   resources out there that are doing these kinds

13   of activities for other reasons.

14   The other is that one could

15   actually think about trying to get, for

16   example, on Wi-Fi, one could say hey, you

17   know, we're going to make available a general

18   standard, which is essentially a management

19   report on spectrum interference as seen by an

20   access point. And a user is allowed to turn

21   that on in his access point, and it will

22   report to an anonymous server someplace that

1   information.

2   There already are enormous

3   databases out there of the location of Wi-Fi

4   access points. If you want to know that, just

5   ask your iPhone where you are and if you're

6   not in a 3G coverage, it will be amazingly

7   accurate if you've got Wi-Fi turned on.

8   There's a lot of this information

9   that's sitting out there. It might be

10   possible with a small amount of voluntary

11   suggestion to industry and people, to actually

12   get these systems to report more information.

13   And then there's privacy respecting all those

14   sort of issues you have to think about to do

15   that.

16   But from strictly a kind of

17   understanding spectrum perspective, the nice

18   thing is all these radios now are smart. They

19   all have processors sitting in them. And to

20   the extent in which you can get some of these

21   radios to voluntarily report what they are

22   seeing, you have a much, much cheaper and

1   better monitoring capability than you'd ever

2   have by going out and just sort of doing

3   random spectrum analyzer measurements.

4   So, it's something to think about

5   whether something of that sort ought to be at

6   least looked at.

7   CO-CHAIR TRAMONT: Harold, and then

8   Karl.

9   MR. FURCHTGOTT-ROTH: In this

10   report, you all have done a lot of wonderful

11   work.

12   CO-CHAIR TRAMONT: Can I ask for

13   the microphone again. I'm sorry, Gary. Can

14   you pass it down? Sorry. Thank you.

15   MR. FURCHTGOTT-ROTH: You've gone

16   to a great deal of work putting this together,

17   and I just want to compliment you on a certain

18   tonal issue that I'm very sensitive to. And

19   those are issues that might particularly

20   affect entities that have invested large sums

21   of money in licenses.

22   And there are two issues pretty

 1   big with Spectrum Inventory I think that need

 2   to have some care taken. One is not to create

 3   a perception that the government is going to

 4   go around and look at usage in licensed

 5   spectrum with the possibility of reclaiming

 6   licenses. I think that might discourage

 7   future investment in licenses.

 8   And the second part is that the

 9   flip side of that is that in many licensed

10   bands there's a lot of unlicensed use, shared

11   use, and it's very difficult to distinguish

12   what activity is going on in terms of

13   transmissions in a particular band, where it's

14   coming from.

15   And so even, as Gary points out,

16   you can collect a lot of information, but Wi-

17   Fi is a precise example of where a lot of the

18   activity may not be for licensed purposes.

19   It would be very discouraging to

20   the role of providing clear market signals for

21   licensed spectrum if there was any concept

22   that usage or that some level of usage too

1   much or too little might lead to some

2   government action to reclaim licenses.

3   And I think the tone right now is

4   right. I just want to make sure it stays at

5   that.

6   MR. COOPER: I wonder if I could

7   just make a comment. That was a very relevant

8   remark.

9   What our committee faces is short

10   term and a long-term problem. On the short

11   term, we don't see the measurement of spectrum

12   really do us much good at all, because we

13   already know that most of the spectrum is

14   unused, and isolated pieces of the spectrum at

15   isolated part of time are overused and there's

16   nothing you can do about that.

17   Long term, and my view of long

18   term is 10 or 15 years. Mark McHenry thinks

19   it's next week. Long term when we can do

20   dynamic spectrum access and when there is

21   government policy that permits it, then the

22   measurements may have or will have some

 1   important value.

 2   And we're tying to somehow

 3   separate those two issues in this report, and

 4   it's very difficult.

 5   CO-CHAIR TRAMONT: Okay. Karl's

 6   next, and then we'll go to Michael.

 7   MR. NEBBIA: I just wanted to step

 8   back to the unlicensed issue. And I think

 9   once again putting it in the context of this

10   inventory, I think we have to remember the

11   inventory, I think, most possibly becomes a

12   beginning point for further discussions. It's

13   not the in-depth understanding of how

14   everything is done, how much people are on.

15   In this particular case for

16   instance with unlicensed devices, a beginning

17   point might be to have the information that is

18   within, I think, the Commission's

19   certification process pulled up where there at

20   least is a list of car key fobs are on this

21   frequency, garage doors are on this frequency.

22   So, at least people know where

 1   they are, because in at least regulatory terms

 2   they don't really have bands that are just set

 3   aside for them. They're often working with

 4   licensed services around and so on.

 5   But, for instance, when DoD began

 6   developing its trunk mobile radio system to

 7   install around the country in 3A to 400, they

 8   would have at least, I think, given it some

 9   thought if it was clear that the whole garage

10   door industry had settled down there over the

11   last 30 years. And, in fact, possibly made

12   some fairly simple decisions in its process of

13   where it put a control channel and so on, so

14   that it wasn't hammering those door openers.

15   Now, those door openers don't have

16   any status, but just knowing that they're

17   there could have enabled maybe some simple

18   decision-making processes that would have

19   resulted in not as much conflict as we've had.

20   So, I think at least as a starting

21   point just being able to get a clear list of

22   where these products are being operated would

1   be really terrific.

2   MR. CROSBY: It's in Appendix A,

3   description of communication devices done by

4   band.

5   MR. NEBBIA: Or once again

6   specifically on the unlicensed side, it would

7   just be nice. Now, I mean we all know that

8   Wi-Fi operates at 2.4. There's some now at

9   five gigahertz. We also know that's data

10   systems at 902 to 928 and so on.

11   But all these other types of

12   devices that have grown up basically

13   underlaying our licensed service bands, many

14   of us don't know where they are. And I think

15   at least as part of the inventory, that would

16   be helpful to have as opposed to trying to get

17   into well, how much are they operating and so

18   on.

19   I think if you talk about car key

20   fobs, everybody has one now. We'll need to

21   debate how much they're used. We know they're

22   there, and I think that becomes a key

 1   component.

 2   CO-CHAIR TRAMONT: Michael, you're

 3   next.

 4   MR. CALABRESE: Yes, I think it's

 5   useful to know, I mean, you know, after

 6   listening to Marty and so on, useful to know

 7   that there is - the report is schizophrenic on

 8   measurements because the committee was

 9   extremely divided on that issue.

10   So, for example, on the one hand

11   we have this appendix that talks about all the

12   benefits of measurements, which I think we

13   would agree. And then we ended up agreeing to

14   that that could be limited to verification and

15   spot checking and so on.

16   On the other hand, there's some

17   language in the front which I'm surprised to

18   see is still here. Measurements of spectrum

19   occupancy will offer little or useful

20   information that is not already available from

21   existing sources, which several of us

22   vehemently disagreed with and I thought we had

1   agreed to take out.

2   So, there's this, you know, very

3   much a division. It will be interesting to

4   look at this juxtaposed to the transparent

5   report which I think also have a different

6   view from that sentence.

7   So anyway, this may be something

8   that we will need to continue airing with the

9   full committee as far as what is the value of

10   actually knowing what's happening as opposed

11   to what's on a paper record or what people

12   self-report when in many cases they don't

13   actually know what's happening on a band that

14   they license because there may be

15   transmissions that are coming over from other

16   bands, rogue operators, you know, some of the

17   sort of things that are mentioned in the

18   appendix, as well as the benefit on bands such

19   as the unlicensed.

20   CO-CHAIR TRAMONT: Greg.

21   MR. ROSSTON: So, I guess I wanted

22   to sort of follow up on Harold's point a

 1   little bit, which is we very much want to make

 2   sure that people who have licenses understand

 3   that this is sort of telling what's going on.

 4   But also when I often talk about doing a

 5   spectrum inventory, tells you what people are

 6   doing, but it does not tell you how much it's

 7   worth. And you need to think about sort of

 8   what's the value of the transmission or the

 9   ability to have unfettered transmission at

10   certain points in time for public safety or

11   things like that that need to have the ability

12   to communicate without interference at very

13   critical points in time.

14   So, I think that's an important

15   thing to put in to qualify that yes, this is

16   an important thing to understand how the

17   spectrum is being used and when it's being

18   used, but that it does not necessarily

19   indicate that supposedly underutilized

20   spectrum from a technical perspective is not

21   necessarily underutilized from an efficiency

22   spec point of view.

 1   MS. WARREN: I just wanted to

 2   address two points which I think are important

 3   and were raised by different members'

 4   comments.

 5   The purpose of the inventory, I

 6   mean, we talked a lot about that, what is the

 7   purpose of it. And we looked at it not as a

 8   tool for reallocation or sharing, but really

 9   a way to give policymakers an understanding of

10   what is there.

11   So, that's why I think you see

12   some of the tonal balance perhaps, and I think

13   we can even say that very much up front what

14   it's purpose is not. And if it were looked at

15   only as a tool for reallocation and sharing,

16   it's not the solution for the future of mobile

17   broadband or anybody else's uses which we

18   don't talk about so much.

19   But I do think that a lot of the

20   technical inventory suggestions that we have

21   are intended to help policymakers start to

22   look at okay, there may be underutilization

1   even in licensed bands. I don't particularly

2   think licensed bands are sacred, and maybe

3   there is an opportunity for sharing if not,

4   you know, obviously reallocating.

5   In terms of value, I think we

6   tried to address that by talking about

7   missions and the purposes and uses that the

8   specific spectrum bands and assignments were

9   being used for so that there was a better

10   understanding to the policymakers not just

11   with the allocation set, but what the

12   individual uses at a sublevel were, again, to

13   give them a better tool for understanding what

14   it was. I just wanted to highlight that.

15   CO-CHAIR TRAMONT: Gary.

16   MR. EPSTEIN: This is a very risky

17   suggestion, but there are a lot of good

18   suggestions that are being made here and we

19   will try to capture them in our subcommittee,

20   but if people want to do specific language it

21   would even be more helpful.

22   MR. CROSBY: Greg's thing on the

1   value of the transmission, that almost is

2   another whole working group, because you can

3   make - well, that's fine, but this is going to

4   make some very hard decisions.

5   Police officers' communication is

6   critically more important than somebody on

7   their iPhone finding out the menu at a Mexican

8   restaurant, right?

9   And so there's going to be some

10 very interesting discussions.

11   MR. EPSTEIN: There's a relatively

12 easy way to handle it, and it's, I think, what

13 Karl said. And that is basically this is a

14 warning signal for further investigation.

15   As Jennifer said, it's not a

16 decision-making tool.

17   MS. WARREN: Exactly.

18   MR. ROSSTON: First of all, I think

19 that this is a very important way to do

20 things, and I just wanted the caveat that this

21 does not say value doesn't, you know, at some

22 point someone should think about values and

1   the idea that John Leibovitz talked about, the

2   voluntary reallocation and things like that

3   are ways to think about value, but I think we

4   want to just put the caveat this is a

5   measuring use, not necessarily measuring

6   value.

7   MS. WARREN: It's not just

8   measuring use. It's identifying what the use

9   is, and that is the value, one would argue,

10   for the policymaker to see, and then go off

11   separate from the inventory and make policy

12   decisions. And those people then equate oh,

13   I think public safety is more important that

14   MSS.

15   CO-CHAIR TRAMONT: Rob and Kevin.

16   MR. GURSS: What is the use that

17   the - when you say what the use is, do you

18   mean the content or what the technical plan

19   is?

20   MS. WARREN: If I recall correctly,

21   and I now can't remember which document it's

22   in because I worked so much on both, but in

 1   one of the two documents, transparency or

 2   inventory, we recommend that it be clearly

 3   understood with the use, to what use is the

 4   frequency assignment or the license being put

 5   or the spectrum being put.

 6   So, if it's a key fob, an MSS

 7   service, air traffic radar versus just generic

 8   radar, you know, I'm a little familiar with

 9   those types of measures that we were talking

10   about, but there would be a gradation beyond

11   there's a radio navigation allocation here.

12   Well, does that tell, you know,

13   that might not tell policymakers as much as

14   explaining so what purpose does that serve.

15   That's what I meant.

16   And it's in one of the two

17   documents, but I apologize I don't recall

18   which.

19   CO-CHAIR TRAMONT: Kevin.

20   DR. KAHN: Sorry. I just want to

21   come back one more time to this issue and I'll

22   try to phrase it in a slightly different way.

 1   What's done here and what this

 2   committee I think was chartered to do is

 3   relevantly speaking retrospective at any given

 4   time. Which is to say that you wind up with

 5   a database that you will struggle on a

 6   continuing basis to try to keep useful and

 7   accurate and up to date.

 8   And I wonder for - and if I

 9   broadly broke thins into the 24-hour seven

10   stuff like Jennifer listed the radars and the

11   map signals, things like that, and the other

12   stuff that's not, whether he's thinking

13   whether in this committee or maybe getting it

14   for future discussion somewhere else about are

15   there technical things that we might suggest

16   going forward that would have a little more of

17   a prospective view of things self-reporting by

18   radio systems when deployed.

19   Because again, you know, I just

20   observed that we have moved from a world in

21   which the radios barely had enough smarts to

22   get their signals on the air, to one in which

1   there's a ton of confrontation essentially out

2   there in these things.

3   And in thinking about this problem

4   on a continuing basis and how do we have a

5   picture of the way in which spectrum is used,

6   I think it would behoove us to ask is there a

7   way to harness that technology to get that

8   picture reported to the policymakers and more

9   continually update a contemporaneous manner at

10   least to take that as a target so that by 2020

11   some committee is not sitting in a room like

12   this going geez, spectrum inventory is kind of

13   out of date, how do we get it updated.

14   I mean, somehow we ought to be

15   thinking how do we move to a mechanism where

16   we use the technology to give this kind of

17   data in a continuing basis to the -

18   CO-CHAIR TRAMONT: I think we

19   should put a marker down for that as a

20   possible -

21   MR. COOPER: Kevin, just a former

22   working group, I understand exactly what you

 1   said and we're going to work very hard to

 2   embed something in our report.

 3   DR. KAHN: Okay.

 4   CO-CHAIR TRAMONT: Bob is going to

 5   wrap this one up.

 6   MR. GURSS: Just kind of briefly on

 7   Kevin's comment about that, I mean, we've

 8   heard others in terms of the technical

 9   capabilities that you were describing. I

10   assume they'll be there or are there.

11   I guess two issues come around.

12   One on the federal side is security issues

13   because how much information do you want about

14   how a particular device is used to be in a

15   database.

16   And on the FCC side, you run into

17   privacy issues in terms of that. So, I'm not

18   saying either of those are insurmountable.

19   But I think going forward, those would be

20   important issues to consider.

21   CO-CHAIR TRAMONT: Great. With

22   that, I think we will end the discussion on

1   this draft report. Thank you for the very

2   hard work of the committee and producing this

3   excellent draft.

4   Our mission now will have whatever

5   version number we're on at the next meeting,

6   will be the final voted upon version. So,

7   urge people to take a closer view of the

8   draft, get their thoughts to the committee so

9   that they can incorporate them to the extent

10 that there's a consensus around those edits

11 and move to final draft, and we will vote on

12 the draft at the next meeting.

13   Yes, Gerry.

14   MR. SALEMME: So, just from a

15 process standpoint, so if we're making

16 comments on this draft, is the draft moving?

17 Are you doing other things with it?

18   MR. CROSBY: No.

19   CO-CHAIR TRAMONT: Why don't we set

20 a timeline for a requested feedback loop.

21 What would you - three weeks?

22   MR. CROSBY: When is the next

1   meeting?

2   CO-CHAIR TRAMONT: It's to be, we

3   hope, eight to ten weeks out.

4   MR. CROSBY: eight to ten weeks.

5   Okay. Three weeks.

6   CO-CHAIR TRAMONT: Three weeks.

7   MR. CROSBY: We can't do anything

8   with it next week, but know that I just assume

9   you give me a red line.

10   CO-CHAIR TRAMONT: Yes.

11   MR. CROSBY: Give me a red line so

12   that I can keep track of all of this.

13   CO-CHAIR TRAMONT: Let's say about

14   April 1. Does that make sense, 1st of April?

15   MR. CROSBY: That's good.

16   CO-CHAIR TRAMONT: Okay.

17   MS. WARREN: Can I make one

18   comment?

19   We did try to incorporate comments

20   that were provided last time when Mark went

21   through the outline. So, for example, Gerry,

22   noting a satellite issue or two in terms of

1   spectrum harmonization and things.

2   So, we did try to encompass that

3   as well, so look for that.

4   MR. SALEMME: Okay. The last thing

5   is, is there a soft copy? Because I don't

6   think I have a soft copy.

7   MR. CROSBY: Joe Gattuso has a soft

8   copy.

9   MR. GATTUSO: Can we put this on -

10   CO-CHAIR TRAMONT: Okay. Well, if

11   not, we will.

12   MR. GATTUSO: And if you'd like, we

13   can start posting this on the website --

14   CO-CHAIR TRAMONT: Sure.

15   MR. CROSBY: Version 8.

16   CO-CHAIR TRAMONT: Yes. The latest

17   and best.

18   MR. DONOVAN: Just a process point,

19   Mr. Chairman.

20   CO-CHAIR TRAMONT: Oh, boy.

21   (Laughter.)

22   MR. DONOVAN: As the subcommittees

1   present their reports and the rest of the

2   committee reviews that report, if there are

3   disagreements among - I can't imagine why

4   there would be.

5   CO-CHAIR TRAMONT: No.

6   MR. DONOVAN: If there are

7   disagreements among us, does the full

8   committee contemplate sort of here's the text

9   of the vote of the full committee with

10 minority positions in the footnotes? Classic

11 FCC stuff.

12   So, how are we going to approach

13 that?

14   CO-CHAIR TRAMONT: This is an

15 excellent topic. It's had varied answers over

16 the course of our three-year tenure.

17   I think our goal is to emerge with

18 a consensus document. We in the past have had

19 if there is not a consensus that emerges in

20 the past, we have had a majority and a

21 minority view. And so that is a path forward,

22 if that is the only path. If need be, that is

1   a path forward.

2   MR. DONOVAN: So, in the context of

3   reviewing documents and people sending in

4   their various positions, should that be done

5   up front or is this something that we do if we

6   can't reach -

7   CO-CHAIR TRAMONT: I think ideally

8   what would happen is the subcommittee

9   leadership would come to the conclusion that

10   there is an inalterable difference of opinion

11   amongst the committee. And then there would

12   be a charge placed on the minority view to

13   create a document that would reflect their

14   views most accurately. That would be

15   presented along with the final draft report

16   that reflects the majority view.

17   MR. DONOVAN: Okay. And then if

18   the conflict arises at full committee?

19   CO-CHAIR TRAMONT: I'm sorry.

20   MR. DONOVAN: In other words, the

21   subcommittee may have differing opinions, and

22   even in my group -

1   CO-CHAIR TRAMONT: Well, you would

2   now be presented - at this time we are now a

3   full committee deliberating the documents.

4   MR. DONOVAN: Right.

5   CO-CHAIR TRAMONT: So, the sense of

6   whether or not there's a majority will be from

7   the full committee.

8   MR. DONOVAN: Okay.

9   CO-CHAIR TRAMONT: Hopefully there

10   will not be something that emerges in the

11   drafting between now and April 1 that's

12   different from what would happen at our

13   ultimate meeting in May.

14   So, presumably if there's an

15   issue, it will get fleshed out in this next

16   round.

17   MR. DONOVAN: Okay.

18   CO-CHAIR TRAMONT: Karl.

19   MR. NEBBIA: I just wanted to

20   mention we certainly value the back and forth.

21   We recognize everybody is not always going to

22   agree, but ultimately what we really need is

1   clear, actionable recommendations. Because,

2   in fact, part of this process ultimately is we

3   get queried to report on how many of the

4   recommendations that we've acted on and what

5   we've done with them.

6   So, if they're not clear enough

7   for us to figure out what the recommendation

8   actually is, we don't know whether to count

9   that or not count that and so on. So,

10   ultimately we need that. For all of the other

11   debate and back and forth, we need clear,

12   actionable recommendations. Thank you.

13   CO-CHAIR TRAMONT: Great. Okay.

14   With that, we will move on to Darrin Mylet's

15   presentation on the work of the Transparency

16   Subcommittee.

17   MR. MYLET: All right. So, good

18   afternoon and thanks to those who have been

19   able to make major contributions to this

20   report. I do invite everybody on the task

21   force to take a look at the document, red

22   line, give us any suggestions, any concerns

1 you might have.

2 Certainly is an interesting topic,

3 spectrum transparency. Because when you

4 listen to the commercial side and you listen

5 to the federal side, you think that all the

6 spectrum is used, allocated or maybe

7 inefficiently used.

8 The facts of the matter is I don't

9 think we have a spectrum transparency

10 definition, so first of all we tried to

11 develop a spectrum transparency definition.

12 So, I invite you to read that on Page 9.

13 With regards to getting into

14 spectrum transparency and understanding

15 transparency, it's difficult for our group to

16 know what FCC or NTIA leadership see or have

17 the ability to see relative to any and all

18 wireless spectrum resources in our country

19 both at the federal and non-federal level, or

20 in fact do they even want to see it may be

21 another question.

22 What procedures sort of exist? I

 1   mean, we saw some of those today. And what

 2   tools are there? When I looked at that IRAC,

 3   it looked like a bunch of paper files.

 4   Hopefully we'll move to more electronic files

 5   and more electronic capabilities perhaps as we

 6   move forward.

 7   But this is the first time I think

 8   we've addressed transparency, and I

 9   anticipated there would be further education

10   discussions on what is use, what's non-use,

11   what's saved, what's reserved, what's

12   warehoused at the federal/non-federal level.

13   And I think we're trying to address some of

14   those in this particular document

15   understanding assignments and allocations,

16   looking at the value of monitoring and

17   measurements which, to me, can really

18   illustrate transparency.

19   I don't know about a lot of people

20   in the group, but I get tired of referencing

21   four and five-year-old spectrum utilization

22   studies. Let's reference some reality. Let's

 1   get to the spectrum fact. And I think that's

 2   the theme of what we're attempting to do.

 3   Discussions on use and discussions

 4   on non-use and really being able to identify

 5   that particular spectrum specificity is

 6   certainly a theme of the recommendations that

 7   we have.

 8   And if spectrum is in fact being

 9   used, then you have another level of

10   discussion which to me sort of gets to the

11   efficiency question.

12   If there's nothing on the air,

13   there's no transmitters or receivers and

14   nothing planned, well, then that spectrum

15   isn't used. But if there is a system that's

16   using five or ten-year-old technology, that

17   may be a question of analyzing efficient use

18   of the particular spectrum, but you can't get

19   into these discussions without levels of

20   transparency that I think we're trying to get

21   at here.

22   As a citizen, a member of CSMAC,

 1   this document is really tailored, in my

 2   opinion, towards the leadership of NTIA and

 3   the leadership of FCC to assure me that the

 4   fed and non-federal spectrum is not

 5   artificially scarce. Which I tend to believe

 6   as an individual, that it is artificially

 7   scarce. Transparency seems to be a theme of

 8   this administration, so let's do it. And

 9   that's part of the recommendations that we're

10   attempting to build here.

11   The consensus finding and theme of

12   our recommendations indicate within the

13   discussions we've had with NTIA folks, we all

14   admit we can do better, and we have to do

15   better. Given what's coming down the road, I

16   believe there's no time more than now to get

17   proactive in this.

18   I mean, I think the spectrum

19   inventory is the first inning of a nine-inning

20   baseball game, and I think we're going to be

21   moving forward and getting better at that.

22   FCC and NTIA leadership and staff

1   can push industry and agency alike to clearly

2   and accurately know how much is out there, how

3   much they have in their control, how much is

4   used. More technical and strategic folks can

5   analyze and advise on policy regarding

6   efficiency, which seems to me to be more about

7   evaluating a specific system or mission.

8   But again if we continue to see

9   that 80 to 90 percent of the spectrum in

10   certain areas comes up on modern spectrum

11   analyzers not being used, it would be nice to

12   have some specificity behind that.

13   So, regarding facts, a prominent

14   official once observed we policymakers are

15   like surgeons. We won't last long if we

16   ignore what we see once we cut the patient

17   open.

18   I think it's time we cut the

19   spectrum patient open and see the reality, and

20   transparency can provide this.

21   (Laughter.)

22   MR. MYLET: And that's the way I

 1   view spectrum is we need to be surgical. We

 2   need to cut into it and really, really see it.

 3   That would eliminate speculation,

 4   probabilities, possibilities, estimates, best

 5   guesses which I think reinforces the status

 6   quo of this spectrum chaos I sometimes think

 7   we're in.

 8   The current spectrum

 9   administration and management systems seem to

10   me to be a spectrum fortress difficult to

11   penetrate and understand. By implementing

12   transparency, we'll get to more

13   accountability, in my opinion, and eventually

14   more use. Primary, co-primary, secondary

15   sharing, all these things.

16   So, we're not even close to

17   hitting the broadband demand that's out there.

18   The incumbents and innovative companies alike

19   need more access. Federal agencies need more

20   access to the spectrum.

21   So, this is the theme of the

22   paper. I think we've made an attempt to

 1   identify a lot of ideas here, certainly opened

 2   up the floor in ideas and recommendations.

 3   Transparency isn't about

 4   reallocating or reassigning. To me, it's

 5   about getting to the spectrum truth and

 6   knowing specifically if you have 5,000

 7   megahertz in the low five gigahertz, every

 8   five or every one or every ten megahertz in

 9   any specific geography of your choosing, zip

10   code, state, country, who has it and how much

11   do they have and maybe how much do they use.

12   So, with that I'll leave it open

13   to the floor for discussion. Thank you.

14   CO-CHAIR TRAMONT: Just a reminder

15   our process here will be the same for this

16   report that's in full draft. So, we're

17   looking for edits by April 1st.

18   So, thoughts on Darrin's draft?

19   MR. FURCHTGOTT-ROTH: Again, you

20   all have done an enormous amount of work. I'm

21   very impressed by the work that's been done.

22   I just want to get some

 1   clarification of - there's a lot of overlap

 2   between this and the spectrum inventory group.

 3   There's some overlap also in subcommittee

 4   members.

 5   I just want to get some guidance

 6   to the full committee about the difference in

 7   approach of these two subcommittees.

 8   MR. MYLET: Well, my feeling is

 9   that spectrum inventory is satisfying a

10   specific request, time, date, certain, you

11   know, it's sort of one singular output. And

12   I felt that spectrum inventory was sort of the

13   beginning of trying to develop technology and

14   policy towards a more comprehensive

15   transparency.

16   CO-CHAIR TRAMONT: Just an

17   institutional thing, and then Michael and then

18   Gary.

19   We have tried at the beginning of

20   each process to have a scope of work statement

21   from each of the subcommittees. As you'll

22   recall, we formed the committees, we asked for

1   scope of work discussions, yet we're distinct.

2   It does underscore the importance

3   of that process. We're about to form two new

4   committees. We should probably focus very

5   clearly on what the scope of work is, and then

6   try and stick with it so that we don't have

7   too much mission creep. So, it's just an

8   institutional note.

9   I think it's inherent that issues

10   are closely related, so there will be some

11   issue creep and bleed. But I think we need to

12   be sensitive when we define the scope of work.

13   And as people are working towards their final

14   products, that they're within the boundaries.

15   Michael.

16   MR. CALABRESE: Yes. Actually, to

17   that I thought that there was a very useful

18   distinction that's framed in this transparency

19   report which is between the internal spectrum

20   transparency and external.

21   So, the inventory group was

22   concerned primarily with what's being

1   presented, you know, what is kind of the list

2   of parameters or metrics to be presented to

3   the public kind of speaking a little bit more

4   toward the bills that are about to go through

5   congress in that regard.

6   Whereas I saw this as being its

7   most important recommendations focus more on

8   the internal transparency for actual

9   management by NTIA and FCC. So, in fact,

10   along those lines I just wanted to highlight

11   what I felt were real terrific framing in

12   terms of this notion of zero-based spectrum

13   budgeting based on NTIA requiring periodic

14   reporting of actual use on a shorter than

15   five-year time frame. I think the

16   transparency committee says two years.

17   And that sort of notion, you know,

18   bringing this notion of zero-based budgeting

19   to spectrum on a usage basis, I think could be

20   really important. And then backing that up

21   with the sort of spot check measurements that

22   I think are recommended in both reports

 1   particularly where there may be some valid or,

 2   as Gary said too, just as a way of identifying

 3   where further investigation is needed.

 4   That sort of threesome is very

 5   powerful, potentially.

 6   CO-CHAIR TRAMONT: Gary.

 7   MR. EPSTEIN: This is outside of

 8   the discussion, but I don't really care.

 9   (Laughter.)

10   MR. EPSTEIN: In other words, there

11   is a lot of overlap in this stuff. And as long

12   as somebody at the end goes through it and

13   makes sure we're consistent, we're okay.

14   In particular, I think Question 2

15   and 3 are where there's the most overlap. 1,

16   3, 4, 5, 6 and seven go to - the rest of them

17   I think really do go to different type of

18   transparency and who gets to see what and how

19   you work through that, but there is a fair

20   amount of overlap there. It may be

21   inevitable, may be fine, just we shouldn't be

22   silly. We should be saying the same thing

1   with both reports when it gets to the end.

2   CO-CHAIR TRAMONT: Fair enough. I

3   agree with you not to be silly.

4   (Off the record comments.)

5   MR. ROSSTON: I think this is again

6   really important that transparency sort of

7   knowing what's there and knowing who has the

8   rights or who's using different spectrum is a

9   great idea.

10   One of the frustrations I remember

11   when doing auctions at the FCC, is the FCC

12   said here we have this database of license

13   assignments and thing, but you're buying this,

14   but you need to go and do your own

15   investigation and buy this at your own risk,

16   and our database isn't the all end all.

17   And I would love the transparency

18   to sort of say somehow clarify who has what

19   and make it be a real official, like, property

20   rights of real property or something that says

21   here is something that this transparency group

22   can pull this out to be a reasonable, accurate

 1   database.

 2   CO-CHAIR TRAMONT: Yes, the notion

 3   of clean title in the auction context is a

 4   fascinating one. And whether or not it's ever

 5   achievable is - Kevin.

 6   DR. KAHN: One of the things

 7   actually I liked about this, and maybe it

 8   might bear emphasizing a little more as the

 9   draft finishes up, is I took this as sort of

10   almost a philosophical positioning of the

11   importance of transparency as a principle

12   throughout the government.

13   And particularly, I mean, within

14   the bounds of course of FOIA exempt and

15   secrecy, I mean, I don't necessarily mean

16   going all public, but one of the things

17   Michael said I detect periodically, and I

18   don't mean to pick on you here because I think

19   there's a truth to it, and it's a truth that

20   we ought to be trying to encourage to go away,

21   which is this notion of the holder of spectrum

22   having a secret to keep from the people who

 1   might look over his shoulder within the

 2   government and ask are you being a wise

 3   steward?

 4   And I think the real message of

 5   this is that we ought to be trying to get to

 6   a place where all spectrum managers within the

 7   government see - now, you'll never get there

 8   of course, but see the optimization of

 9   spectrum use as a good and not be in this

10   position we are today where we all suspect,

11   right, that there is folks somewhere inside

12   the Pentagon hiding away spectrum they don't

13   really need. You know what I mean?

14   And philosophically that's a very

15   different position to get to. And so, I mean,

16   one of the things I took out of this report

17   was actually that it was a call to a different

18   philosophical kind of underpinning for how the

19   government should try to get its players to

20   treat spectrum and be - the inventory is more,

21   you know, and whatever comes out of the

22   inventories is sort of the concreteness of

 1   that, you know, can I find stuff, can I

 2   measure the stuff?

 3   But if we can actually get people

 4   to get us all out of this sort of it's a

 5   conflict mode, to some degree at least I think

 6   we'd all benefit from it.

 7   CO-CHAIR TRAMONT: And to drive

 8   your point, having a global view of all

 9   spectrum use whether it's not just the

10   commercial guys or not just public safety or

11   not just federal government.

12   DR. KAHN: Yes.

13   CO-CHAIR TRAMONT: I thought that

14   was very compelling as well.

15   Jennifer, and then we'll move on.

16   MS. WARREN: I just wanted to pick

17   up on Greg's point because I think if you look

18   at maybe second and third lines of some of the

19   recommendations, you'll see that there are

20   recommendations that go through NTIA to the

21   FCC as well to address some of not necessarily

22   the property rights, that will be a whole

 1   other debate, but on at least understanding

 2   who's there and giving a fuller picture of it.

 3   CO-CHAIR TRAMONT: Anybody else?

 4   MR. MYLET: NTIA has provided - we

 5   will be talking to NTIA about this. I think

 6   they're just now getting a copy and reading

 7   it. We look forward to getting those comments

 8   and injecting that information.

 9   One of the ideas out of this, too,

10   that I thought about that's just a separate

11   idea, but sort of the gross spectrum product

12   knowing how much spectrum we've allocated or

13   assigned, and having some sort of measure of

14   what we think we probably use, might be an

15   interesting statistic that we evolve to in the

16   future. And that may also reflect our

17   broadband rankings as a country perhaps as we

18   go forward.

19   CO-CHAIR TRAMONT: It's a

20   fascinating think tank project. The gross

21   spectrum product every year each quarter is a

22   report on how we're doing. Great.

1   With that, we're going to move on

2   to the next subcommittee. Final thoughts on

3   Darrin's? Very good.

4   Mr. Donovan, you're up next on the

5   Adjacent Band/Dynamic Spectrum Access

6   Subcommittee, and our goal here is slightly

7   different.

8   David has a memo that he's

9   presented to the group. A draft will follow.

10   We're once again driving toward adoption of a

11   final report in May.

12   Mr. Donovan.

13   MR. DONOVAN: Thank you, Mr.

14   Chairman. Professor the paper is almost

15   drafted. Almost, I promise.

16   The bottom line here is that we

17   have been working, and I've laid out what we

18   believe is sort of the task and was hinted

19   around this morning.

20   And that is if you're going to

21   fully realize either investment both from the

22   consumer side and also from the communications

 1   investment side, we really need to articulate

 2   or have clearly articulated interference

 3   rights.

 4   To use the property analogy which

 5   has been used, in essence these are the

 6   property rights, the boundaries of any new

 7   system that's being devised. And it is

 8   becoming increasingly complex with additional

 9   sharing. Also, with respect to you may have

10   a system in which you've auctioned your

11   purchase spectrum, you develop your system.

12   Then a year or two later you end up sharing.

13   Those types of things with

14   spectrum demand increasing are things that we

15   really begin to have to consider, and it comes

16   home to roost in the interference approach.

17   So, what we have done is

18   essentially to do the following: We have about

19   a 50-page paper that we're trying to still

20   down for easy consumption. First is to go

21   through the various interference mechanisms

22   that we face now and that we are likely to

1   face going forward.

2   Then also looking at the various

3   methods by which one can prevent that

4   interference looking at the use of guard

5   bands, the harmonization of spectrum

6   allocations and allotments, cognitive radio

7   techniques, frequency agile radio sensing, the

8   uses of databases, all of those are forward-

9   looking ways of avoiding interference and

10   sharing.

11   We look also at the relationship

12   between spectrum efficiency and interference

13   and receiver performance. I think one of the

14   key things that is lost in this debate is when

15   you look at spectrum, is it being used

16   efficiently or isn't it, a lot of it is a

17   function of the receivers and how tolerant the

18   receivers are to either operations on the

19   adjacent channels and there are always policy

20   implications that go on with that.

21   So, I think on a going-forward

22   basis in terms of spectrum management, one of

1   the things we are looking at is to what extent

2   the government should become more heavily

3   involved in looking at the receiver side of

4   the equation.

5   And that is obviously a very

6   difficult area. It's one that certainly the

7   Commission has sort of been into, but

8   certainly this adds on another layer of

9   complexity.

10   The other thing is, the fourth

11   element that we're looking at is once you

12   establish this type of model particularly with

13   sharing, how do we deal with enforceabilty of

14   interference rights?

15   Normally if you look at

16   Commission's processes and complaints are

17   filed with respect to interference, it can

18   take months for them to ultimately be

19   resolved. And it's very difficult, for

20   example - in a real property case, you would

21   be able to go to court and be able to get a

22   temporary restraining order if you proved your

 1   case to try to stop that. That's not what we

 2   have in the regulatory regime right now.

 3   And so the question is, is what

 4   types of mechanisms should we look at?

 5   Hopefully, and one would hope,

 6   that the technology would obviate the need for

 7   that type of oversight if it works, but I

 8   think that's one thing that we are looking to

 9   explore.

10   I think finally the other thing

11   that we're looking at is you have different

12   interference resolution regimes that vary

13   depending on the service. And I think one of

14   the things, and this is very, very hard to do,

15   but one of the things that we're looking at is

16   to try to get a sort of basic set of

17   principles by which folks can be governed by.

18   I want to thank Neville. I know

19   David has done some terrific work. Neville

20   has done work. Mr. Salemme has contributed.

21   Mark McHenry has contributed. Janice

22   Obuchowski has contributed. And we're looking

 1   to wrap this up and hopefully get a document

 2   out in the next several weeks.

 3   CO-CHAIR TRAMONT: Great. Thoughts

 4   for David on his committee's work.

 5   MR. GURSS: I just thank you on

 6   your emphasis on receiver issues. I remember

 7   that one being an issue for many, many years,

 8   and a frustrating one.

 9   But just from the practical

10   perspective of users of the spectrum, I mean,

11   the lack of receiver standards often lead to

12   huge problems in trying to move spectrum

13   efficiently and then creating interference

14   problems that you might have to undo. Where

15   if you had better receivers, you could live

16   together. So, that's very good.

17   CO-CHAIR TRAMONT: Jennifer, and

18   then Marty.

19   MS. WARREN: I think the way this

20   sounds, it's going to be really interesting to

21   read. And with the goal of the adoption at

22   the next meeting of the report that I think

1   you said right now is at 50 pages, but is

2   going to be somewhat synthesized, perhaps it

3   would be possible to distribute it to this

4   group in its entirety sooner other than later.

5   MR. DONOVAN: Absolutely.

6   MS. WARREN: Because I really don't

7   know how we can digest that and properly serve

8   our role to adopt something we haven't seen in

9   full form at the next meeting.

10   CO-CHAIR TRAMONT: Yes, it's a

11   goal. And if it doesn't work out, it doesn't

12   work out, but our goal is to get a full draft

13   circulated to everyone and to be put on the

14   website, and then to drive the process from

15   there.

16   So, if it works out great, if

17   there's not enough time, then we can -

18   MR. DONOVAN: No, there will be

19   plenty of time. Our goal is to get this out

20   way in advance of the next meeting. It's

21   almost there, it's just not quite so.

22   CO-CHAIR TRAMONT: Great. Any

1   other comments? Marty, did you want to -

2   MR. COOPER: Well, David, I'll get

3   you some verbiage so you can add something in

4   there about interference mitigation by multi-

5   antenna processing.

6   MR. DONOVAN: Sure. Absolutely.

7   CO-CHAIR TRAMONT: Okay. With

8   that, thank you, David, very much.

9   We'll move on to Michael, who has

10   graciously agreed to take the leadership of

11   the Incentive Subcommittee and has a brief

12   report, I suspect, since his chairmanship is

13   relatively a recent vintage.

14   MR. CALABRESE: Okay. Well, we

15   really - nobody's missed a meeting because I

16   just recently found this out.

17   (Laughter.)

18   MR. CALABRESE: I thank Bryan and

19   Dale for having the confidence to hand me a

20   hot potato. I understand that this was a

21   somewhat contentious issue on the CSMAC in the

22   past, which is probably why it makes sense to

1   have somebody new to CSMAC wade in thinking

2   that they can get consensus.

3   But in any event, we'll try to

4   both look back at what's been discussed in the

5   past as well as bring new ideas to the table.

6   If anyone else would like to join or if you're

7   not sure you've already volunteered for the

8   subcommittee, please let me know and we'll

9   have a first meeting within the next two weeks

10   and try to meet several times before the next

11   general meeting.

12   CO-CHAIR TRAMONT: I think our hope

13   would be a draft report at the next meeting if

14   we possibly could drive to that.

15   MR. SALEMME: So, you had mentioned

16   that you were going to define the scope of the

17   report? Is that -

18   CO-CHAIR TRAMONT: So, at the

19   beginning -

20   MR. SALEMME: Is this more -

21   CO-CHAIR TRAMONT: Yes, this one

22   has been done.

1   MR. SALEMME: Okay.

2   CO-CHAIR TRAMONT: The ones we are

3   about to discuss, we will need to find the

4   scope.

5   MR. SALEMME: Okay.

6   CO-CHAIR TRAMONT: So, this one we

7   defined the scope when the committee was first

8   created.

9   So, anything on Michael's work

10   before we move on to new topics? Great.

11   Thank you.

12   So, Dale and I chatted before the

13   meeting, and what we thought we would do in an

14   effort to create the two new committees, just

15   review the list of topics that were brought up

16   the last time, but not selected. So, let me

17   just review that list with the idea that these

18   could become topics for this for our next two

19   committees.

20   One was the National Spectrum

21   Plan, what should be in such a plan, what are

22   the merits of having a National Spectrum Plan.

1   Unlicensed policy, radars, defining harmful

2   interference, receiver standards building off

3   of some of the discussion David has.

4   So, that was the list of

5   unselected topics or not selected topics from

6   the last time. I think also I started

7   science, testing, passive was there. But we

8   did not receive any votes the first time, so

9   we did not think that was a strong competitor

10   for a topic this time.

11   In addition, two other topics

12   could have emerged. One is that as Anna

13   discussed in her opening remarks this morning,

14   Secretary Strickling is very interested in

15   technical sharing and the scope of policies

16   that would encourage sharing. And she very

17   much wanted to encourage us to look at that as

18   a potential topic.

19   And then I think Kevin's

20   suggestion earlier builds on some other

21   discussions we've had about monitoring

22   measurements and something along the lines of

 1   sort of data collection reporting as a way to

 2   sort of have a constantly evolving database,

 3   a current database on spectrum use issues.

 4   So, I think that's the list. Are

 5   there any additional topics people would like

 6   to suggest?

 7   Jennifer.

 8   MS. WARREN: Well, actually I think

 9   it was one that came up before and would be

10   pertinent with respect to sharing. And I

11   believe Janice Obuchowski raised it last time,

12   which was enforcement.

13   CO-CHAIR TRAMONT: Oh, yes.

14   MS. WARREN: And I think that kind

15   of permeates as an underlying issue with

16   respect to technical sharing.

17   MR. DONOVAN: Right. Jennifer, we

18   have that covered here.

19   MS. WARREN: You do? Okay.

20   MR. DONOVAN: There's an

21   enforcement section as well as, frankly, a

22   sharing section.

1   MS. WARREN: Okay.

2   MR. DONOVAN: Because we're looking

3   at it from a constructive and interference

4   avoidance mechanism.

5   MS. WARREN: Okay.

6   MR. DONOVAN: So, that if one

7   shares in the technology that allows that to

8   be used, it allows you to prevent co-channel

9   or adjacent channel interference.

10   CO-CHAIR TRAMONT: Yes, let me ask

11   Karl or Joe or anybody from NTIA, do you know

12   what Larry and Anna had in mind in terms of if

13   you're to do a sharing group whether what

14   David has just described what we're trying to

15   achieve, or this is two separate topics?

16   MR. NEBBIA: I think my guess is

17   that they would probably like it explored m

18   ore as a topic in and of itself in terms of

19   the kinds of opportunistic technologies that

20   may be coming as opposed to - once again

21   there's a lot of aspects of sharing that mix

22   together compatibility or various submissions,

1   all these different types of things.

2   I think they would like us given

3   the fact that we're - obviously there's only

4   so much reallocating, there's only so much

5   spectrum out there, and then actual sharing

6   types of technology be they geolocation

7   sensing.

8   I think they'd like, I think, a

9   more in-depth discussion of those types of

10   approaches, I think, specifically.

11   MR. CROSBY: So, we may have scope

12   creep here or something.

13   MR. DONOVAN: Yes, we're covering

14   all that. And maybe if you see what we have,

15   maybe that's probably the best then to see if

16   you want to go into more detail.

17   MR. SALEMME: My suggestion may be

18   that this become the basis of more that

19   actually comes -

20   MR. DONOVAN: That's fine.

21   MR. SALEMME: It takes an outload

22   of the current workgroup, become the basis and

 1   the starting point for the next one if you

 2   want.

 3   MR. COOPER: It will be available

 4   soon enough, so it would feed right in.

 5   MS. WARREN: That sounds like a

 6   good idea.

 7   CO-CHAIR TRAMONT: That does sound

 8   like a good idea, except for the look on

 9   Mark's face.

10   MR. CROSBY: No, the enforcement

11   one, I'd like to spend a little more time with

12   that enforcement one. I mean, I know you've

13   got to put it in the thing, but that's a

14   pretty credible, you know, what are we doing

15   today, what's failing today, what needs to be

16   in place. It's more than just technical and

17   you can't always assume the equipment is going

18   to solve all the - or the technical is going

19   to follow that down.

20   Bringing people with badges that

21   go in and go you're doing this, it's coming

22   down, your license revocation, you need some -

1   MR. DONOVAN: No, Mark, I couldn't

2   agree with you more.

3   MR. COOPER: Okay.

4   MR. DONOVAN: And, in fact, I mean,

5   one of the classic examples at least from my

6   industry was when you had sort of your in-car

7   radio sort of devices and they were coming

8   through on essentially the bands that National

9   Public Radio was using. So, you drive up and

10   suddenly Howard Stern pops in over, you know,

11   NPR.

12   Now, we went to the Commission and

13   said that it was happening a lot. I mean, a

14   real lot. And we went to the Commission and

15   said fix this. Please fix this.

16   It hasn't been fixed. So, there

17   are regulatory components that really need to

18   be dealt with. Because once you have - how

19   quickly a responsible agency be it the

20   Commission or some other entity, so it's not

21   just technology.

22   MR. CROSBY: I don't mean to beat a

 1   dead horse. It's very critical, and it gets

 2   to what Harold says. If you don't have proper

 3   enforcement, people don't invest in bands if

 4   people aren't taking care of business.

 5   MR. DONOVAN: Couldn't agree more.

 6   And, in fact, Janice Obuchowski, frankly,

 7   wrote that section.

 8   MS. WARREN: People don't share.

 9   CO-CHAIR TRAMONT: Well, people

10   have only been sharing since they were five,

11   right?

12   (Laughter.)

13   CO-CHAIR TRAMONT: Michael, go

14   ahead.

15   MR. COOPER: Yes, just in terms of

16   what the scope of some of these might be, I

17   just wanted to suggest you mentioned

18   unlicensed, that if we do that, that

19   particularly in the context of what you said

20   the assistant secretary's interests are and

21   what we think is coming in the National

22   Broadband Plan, that we also think of

1   unlicensed perhaps more broadly, address it

2   more broadly in terms of not just what we

3   understand today as 802.11 with Part 15 rules,

4   but that we look at what could the other -

5   could there be a more varied ecosystem for

6   non-licensed sharing of spectrum. Are there

7   like cooperative protocols? Are there

8   licensing light? What are some of the

9   variations around unlicensed that would make

10   that whole basket more useful for efficient

11   spectrum access?

12   CO-CHAIR TRAMONT: Gary.

13   MR. EPSTEIN: I just have a quick

14   process question. You started out with a

15   little bit of a laundry list on stuff we

16   decided not to do, and then you came up with

17   stuff that Larry and Anna said we probably

18   should do, I think. And we're doing a lot and

19   we're running short of time.

20   What are we doing here?

21   CO-CHAIR TRAMONT: I'm sorry. The

22   goal of the laundry list was these are the

1   things we thought about the last time. There

2   were a couple suggestions for new topics,

3   which I was trying to get the whole list out,

4   with the goal that we as a group are going to

5   choose two of those that are going to form new

6   subcommittees today.

7   MR. EPSTEIN: Why?

8   CO-CHAIR TRAMONT: Sorry?

9   MR. EPSTEIN: I'm just asking why.

10   I mean, in other words, we feel we're

11   incomplete or because Larry Strickling us for

12   it or this is what we always planned to do or

13   -

14   CO-CHAIR HATFIELD: Well, we had to

15   ration last time how much we could do. So, we

16   rationed it by selecting from among that group

17   of things we could do.

18   MR. EPSTEIN: Okay.

19   CO-CHAIR HATFIELD: And now since

20   we've accomplished some of those -

21   MR. EPSTEIN: I see.

22   CO-CHAIR HATFIELD: - pretty well,

1 now we have a chance to pick up the ones that

2 were left. And what I see happening is we

3 learn more. As we do these we say oh, gosh,

4 we should have - this is an area we need to

5 dig more deeply into. And so those have been

6 proposed as additional -

7 MR. EPSTEIN: Okay.

8 CO-CHAIR HATFIELD: - potential

9 topics. So, where I see us is I'd like to have

10 a sense of the group as to which of these

11 topics that have been approached so far, we

12 may want to pick up and make new topics and

13 make sure that the scope is defined properly

14 and so forth.

15 So, that's kind of where I see

16 where we are.

17 MS. WARREN: Just to raise one

18 point though, four working groups, that was a

19 lot of working groups this last time. And

20 even though there were a lot of volunteers for

21 each of the working groups, I think it's fair

22 to say a subset was usually - you shouldn't

```
 1    look at who the members were in each one and

 2    say oh, there was ten in each that were

 3    active, because everybody had options with

 4    these different working groups.

 5              So, I do want to suggest that

 6    perhaps it be considered does it have to be

 7    two more just to have another four, or is

 8    there just one more that's really a priority?

 9              I mean, there may be things where

10    people can contribute more if we aren't having

11    four to do at once.  Just a thought.

12              MR. CROSBY: Do we all turn into a

13    pumpkin in May?  We're done or what?  That's

14    not a lot of time, really.

15              CO-CHAIR TRAMONT: I don't think

16    our terms are up for another - correct me if

17    I'm wrong.  We have a two-year lifespan,

18    right?

19              MS. WARREN: Yes.

20              MR. GATTUSO: The charter is up in

21    about a year.

22              CO-CHAIR TRAMONT: Yes.
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 1   MR. GATTUSO: The appointments are

 2   up in two years.

 3   CO-CHAIR TRAMONT: Yes. So, in May

 4   is just the next meeting.

 5   (Simultaneous speaking.)

 6   CO-CHAIR TRAMONT: These two new

 7   committees will always be reporting on their

 8   initial work at the May meeting. There will

 9   be no drafts, I mean, this is starting the new

10   process.

11   So, what the goal is since a bunch

12   of stuff should be completely done in May,

13   this is the next pipeline. These are

14   pipeline. I'm sorry.

15   MR. SALEMME: So, as someone who

16   has actually seen the report that has been

17   done by the Adjacent Band/Dynamic Spectrum

18   Access Subcommittee both on enforcement and

19   sharing, and I think that you would see that

20   there probably is some activity that's already

21   that would help that process.

22   We can either build off what is

1   done there or start fresh, which the committee

2   can decide. Unlicensed seems to be the other

3   area that isn't, you know, that probably

4   should be addressed. So, that's just a

5   recommendation that if there's a new one to be

6   done, I would recommend unlicensed.

7   CO-CHAIR TRAMONT: Bob wanted to

8   say something.

9   MR. GURSS: I just wanted to second

10   what Gerry said. It sounds like we want to

11   keep our powder dry until we get this other

12   report. So, we don't want to create two new

13   reports, two new things today, and then see

14   that report and say hey, that - there is one

15   or two other areas in that report that could

16   use some more expansion upon, and then we're

17   overburdened.

18   CO-CHAIR HATFIELD: Go ahead.

19   CO-CHAIR TRAMONT: Well, what I

20   wondered is whether or not in an effort to --

21   since the sharing request was sort of a

22   specific one that someone tomorrow for all

1   practical purposes, could work with David,

2   take that part out of his report and begin

3   working with that as a separate draft. And

4   then you would do the rest of the report, of

5   you -

6   MR. DONOVAN: I think I'll be

7   honest with you, I'd just rather just in terms

8   of meeting the goal is keep it in, push it

9   out.

10   And then if you want further - and

11   then use it as the framework for further work.

12   CO-CHAIR TRAMONT: Commissioner

13   Furchtgott-Roth, and then we'll go to you,

14   Brian.

15   MR. FONTES: Thanks.

16   MR. FURCHTGOTT-ROTH: Simple

17   thought. Secretary Strickling could simply -

18   we're here to help. If he has some

19   priorities, why don't we let him pick. If

20   they're really important to him he should just

21   tell us and we'll do it.

22   CO-CHAIR TRAMONT: I think that's

1   accurately characterized. NTIA has always

2   been very open about the committee can select

3   whichever course of direction, but it was

4   flagged that sharing is something of

5   particular interest and particular relevance

6   right now. So, it was not any way, you know,

7   we really want you to do sharing. It was this

8   is something we're really focused on, it would

9   be very helpful. So, I want to be clear about

10 what was and was not requested.

11   Mr. Fontes.

12   MR. FONTES: Thank you, and I

13 appreciated all the comments on the

14 presentations that were made earlier today.

15 With respect to relying on beyond just the

16 initial report. I think there will be some

17 areas, that would require, how should I say

18 this, probably additional work/controversy or

19 controversy and work.

20   And I think that in order to be

21 effective in moving forward without spreading

22 everybody too thin, I kind of agree with what

 1   Jennifer said, I think that we need to figure

 2   out where these reports are going to lead us,

 3   address a few of those issues on a continuing

 4   basis. And then if Larry or others say okay,

 5   sharing is critically important, then let's

 6   focus on that perhaps as an area for future

 7   work so that we're not running parallel

 8   meetings here that may in fact be spilling

 9   over to work that's being done on the reports

10   themselves.

11   CO-CHAIR HATFIELD: Thank you. I

12   understand. I'm a little concerned that we

13   use our time effectively. Would there be a

14   possibility that we could be drafting for

15   consideration a work statement and scope of

16   work so that next time we would be ready to

17   adopt it?

18   In other words, for example, in

19   the sharing and that sort of - I'd hate to

20   wait until everything is all done, then pick

21   it up again, but that might be a way forward.

22   It would also give us a chance to

1   run it by NTIA to see if we've captured what

2   they had in mind when they proposed - or

3   Secretary Strickling suggested that we ought

4   to be looking more - we probably want to look

5   more at sharing.

6   MR. CROSBY: Mr. Chairman, would

7   that be three? Would that be unlicensed,

8   sharing and enforcement?

9   CO-CHAIR TRAMONT: I think that's

10 actually sharing. I think we have a separate

11 decision to make as a group, and I guess I'm

12 taking Jennifer's entreaty to scale back our

13 expectations slightly.

14   (Off the record comments.)

15   CO-CHAIR TRAMONT: We're going to

16 do one more. Maybe one more makes sense and

17 we can pick it could be unlicensed, it could

18 be Kevin's discussion of data collection

19 reporting, it could be the National Spectrum

20 Plan, it could be radars, it could be harmful

21 interference, could be receiver standards.

22 Any of those. Pick one of them, and that

1   would be the -- that work group could go ahead

2   and get launched now, basically.

3   MR. ROSSTON: My guess is that the

4   Incentives Committee although it has - our new

5   chairman will probably have incentives for

6   unlicensed in the document would be a guess,

7   and I think that's an appropriate place to

8   think about unlicensed versus licensed

9   incentives.

10   So, at least part of that will be

11   included in the Incentives Committee, I think.

12   CO-CHAIR TRAMONT: And it does

13   underscore again, that depending what topic we

14   pick, some of it will be in the circulated

15   scope of work -- the Chairman will circulate

16   the scope of work and it will be -- we'll try

17   to keep it within our on our lanes on various

18   discussions.

19   MR. CROSBY: Don't let the good

20   doctor force you to resign before you even

21   start.

22   (Laughter.)

1   MR. PARTICIPANT: But it's a good

2   point that there's almost necessarily overlay

3   because incentives would be for sharing as

4   well. And in sharing, you know, so that's the

5   sharing thing, and sharing may be unlicensed

6   or something else. We'll have to consider all

7   that.

8   CO-CHAIR TRAMONT: So, in an effort

9   to drive selection of the one additional

10   subcommittee that we will form today, can we

11   just do a rough show of hands for people who

12   are for these following topics: So, receiver

13   standards? Harmful interference? Radars?

14   MR. DONOVAN: We don't have that.

15   (Laughter.)

16   CO-CHAIR TRAMONT: Unlicensed

17   policy. National Spectrum Plan. And then

18   finally the data collection reporting, sort of

19   Kevin's permutation on how we sort of keep a

20   spectrum inventory current.

21   MR. CROSBY: Well, that one almost

22   needs to be added to the spectrum inventory

1   thing.

2   MR. COOPER: Well, we'll have some

3   comments on it.

4   MR. CROSBY: Exactly.

5   MR. COOPER: We're talking about

6   having another subcommittee.

7   CO-CHAIR TRAMONT: Yes, that's what

8   we're proposing here.

9   DR. KHAN: Maybe that they can add

10   enough content, it depends on how deep you

11   want to go, though.

12   CO-CHAIR TRAMONT: Folks on the

13   phone, your preferences?

14   MR. FONTES: Well, I certainly

15   think the unlicensed is going to be critically

16   important. Certainly the inventory and

17   keeping that dynamic is always going to be a

18   challenge.

19   And what somebody said earlier

20   today, that we'll be sitting in a room ten

21   years from now or 20 years from now trying to

22   update the spectrum use out there.

1   I can simply identify with that

2   because I've been to quite a few of those over

3   the years. So, I do think that trying to keep

4   spectrum current, and the monitoring of it is

5   -- keep spectrum use current is important as

6   well.

7   CO-CHAIR TRAMONT: Okay. Anyone

8   else?

9   MR. LEWIS: I'd probably go with

10   unlicensed and National Spectrum Plan. Those

11   are the two that are going to be issues we

12   need to look at eventually.

13   CO-CHAIR TRAMONT: thanks, Jim.

14   Any others on the phone?

15   Anyone taking us off mute to tell

16   us what they thought?

17   All right. So, in light of that I

18   think we have a rough consensus around the

19   unlicensed approach or the unlicensed scope.

20   Now, if we could get a volunteer

21   to chair that subcommittee, someone who has

22   perhaps not served yet, that would be

 1   terrific, and to draft the scope of work.

 2   So, do we have any volunteers for

 3   that or are we going to - Mr. Salemme?

 4   Excellent. Terrific.

 5   So, Gerry will draft a scope of

 6   work and will also take volunteers to serve on

 7   his committee. So, we'll circulate an e-mail,

 8   Joe, to get volunteers to serve with Gerry.

 9   And then draft a scope of work, get that

10   around, and then you can go ahead and start

11   working the committee with the idea of getting

12   an interim report available for the May

13   meeting.

14   CO-CHAIR HATFIELD: Are you guys

15   going to draft the statement of work on

16   sharing? You talked about that being done

17   also.

18   CO-CHAIR TRAMONT: I think once we

19   have David's draft - how did we say we're

20   going to do this?

21   We're going to see his draft, I

22   think at least, and then we'll need a chair

1   for the sharing committee actually.

2   CO-CHAIR HATFIELD? Pick that up

3   and extend it to a new committee with a new

4   scope of work.

5   MS. WARREN: Can I make the

6   suggestion that somebody could offer to do the

7   statement of work without committing to be the

8   chair of the committee. I mean, seriously

9   just to get this going in the interim.

10   CO-CHAIR TRAMONT: Would someone

11   like to -

12   MR. EPSTEIN: I will.

13   CO-CHAIR TRAMONT: Mr. Epstein.

14   Excellent. So, Mr. Epstein will be in charge

15   of drafting the scope of work, and we'll be in

16   charge of drafting him to be committee chair.

17   (Laughter.)

18   CO-CHAIR TRAMONT: So, thank you on

19   these subcommittee chairs. That's terrific.

20   Okay. So with that, I think we have a path

21   forward.

22   Everyone comfortable with where we

 1   are? Anyone on the phone, any additional

 2   questions about that?

 3   MR. FONTES: Nope - well, just a

 4   quick question. Joe will be circulating the

 5   new committees, new chairs so that we can know

 6   who to contact as well as volunteer?

 7   CO-CHAIR TRAMONT: Yes, Joe's going

 8   to circulate a petition essentially for people

 9   to volunteer to serve on either of the two new

10   subcommittees.

11   MR. FONTES: Great. Thank you.

12   CO-CHAIR TRAMONT: Absolutely.

13   Okay. With that, we open it up for public

14   comment on the work of the CSMAC.

15   Anyone have a public comment? If

16   you can, identify yourself so everybody on the

17   record and all that stuff.

18   MR. SNIDER: Can I just ask a

19   question of you? It's Jim Snider, from

20   iSolon. First, I want to applaud the

21   committee for addressing the transparency

22   issue, especially the transparency

1   subcommittee.

2   I worked on those quite a bit, and

3   was interested in the whole topic of spectrum

4   transparency in the early 2000s, it was Karl

5   and Joe who I bothered quite bit with my

6   questions will recall and perhaps some others

7   in this room, it was a great time, and I think

8   you guys really executed.

9   But I have two questions. Now I'm

10   fairly active in the open government community

11   in DC, and as you know the administration is

12   pushing aggressively with their open

13   government directive. One of the areas that

14   is being looked at is transparency of federal

15   advisory committees like this one, in which

16   there are a thousand of 40,000 individuals

17   like you.

18   And one of the questions that has

19   come up, not perhaps one of the most important

20   questions compared to webcasting and things

21   like that, is to make accessible the

22   applications, the statement of credentials of

 1   people that apply to these bodies, and I

 2   haven't found an argument why they shouldn't

 3   be public.

 4   Most of this information is

 5   already generally available on the web, so I

 6   would be curious if anybody, doesn't have to

 7   be now, maybe after, if there are any public

 8   interest objections to making the applications

 9   for federal advisory committee members public?

10   Most of this stuff again is

11   readily on the web. Why shouldn't this be

12   made public as part of an effort to open up

13   federal advisory. So, that's a question.

14   And then another question, which

15   might be a little bit more peripheral on the

16   transparency issue, but I think this is

17   important, is no one says that federal

18   advisory committees are academic institutions

19   and would follow standards of academic

20   integrity.

21   But to put out a hypothetical

22   example, if in one of your papers you were

1   citing somebody prominently, okay, quite

2   purposefully had engaged in substantial

3   plagiarism. Now, very well written, useful

4   information.

5   Would that be a concern of this

6   body not because it's not an academic

7   institution. Why would it care, you wouldn't

8   want to check into such a thing, but are

9   academics standards of integrity appropriate

10 for a federal advisory body such as this one?

11   So, if you have any thoughts

12 afterwards, please let me know. And I'm

13 expecting legislation opening up the FACA even

14 within the next few weeks to be introduced,

15 and so a lot of the questions as to what might

16 go into that legislation.

17   CO-CHAIR TRAMONT: I appreciate

18 your comments and consider those topics going

19 forward and take them into advisement. Thank

20 you.

21   Other comments? Prudence?

22   MS. PARKS: Yes. My name is

 1   Prudence Parks, and I'm with the Utilities

 2   Telecom Council. Just so that you're aware,

 3   the Utilities Telecom Council, UTC, is an

 4   association of energy utilities and pipelines.

 5   My comments go to the spectrum

 6   inventory and the report. We certainly

 7   understand - our members have expressed some

 8   concern about the inventory, and we certainly

 9   understand the reason behind the inventory,

10   but we feel as if it's one thing to gather

11   information and create a database that is

12   going to become a basis or to inform the

13   spectrum management allocation process, and

14   it's quite another to provide information on

15   the granular level as to what purposes and

16   functions and missions that that spectrum

17   serves especially when it relates to critical

18   and infrastructure functions such as the

19   supply of electricity and clean water in the

20   United States.

21   We understand a lot of this

22   information is on the ULS, however when you

 1   take all of this information and coordinate it

 2   and make it publicly accessible on a website,

 3   what you're doing is putting a neat little bow

 4   on all of this information that is publicly

 5   accessible at the stroke of a key for those

 6   who wish to do us harm.

 7   And I'm referencing specifically

 8   those stated networks that have been subject,

 9   CNN reports, the recent one that was on - a

10   recent CNN report on cyber shock. The Cyber

11   Shockwave I believe it was called, where you

12   could take down all of the electric grid and

13   put the entire nation at risk because of the

14   infiltration of these networks.

15   There are two issues here. And

16   one of them that we are most concerned about

17   is the security of the information. Most of

18   our licensees are FCC licensees. However with

19   the introduction of smart grid you're going to

20   have an interconnected system.

21   So, all of the information,

22   whether it's NTIA or FCC, we're all going to

 1   be connected, the vulnerability of one is the

 2   vulnerability of all.

 3   So, I'm not sure whether the

 4   report on the spectrum inventory is going to

 5   address those issues in particular, but it is

 6   of great concern to our members.

 7   And to wrap up, this is a classic

 8   - it seems like a classic case of one hand

 9   doing what the other - one hand not knowing

10   what the other hand is doing. And that is

11   spectrum policy issues are being done to use

12   common, the town's nomenclature right now,

13   stovepiping spectrum policy issues and

14   security issues.

15   Congress is very concerned about

16   cyber security and the electric grade, and on

17   the other hand they want to have open access

18   to all the spectrum information all the way

19   down to what we use it for.

20   So, we are very concerned about

21   that and just want to bring that to your

22   attention.

 1   CO-CHAIR TRAMONT: Of course we

 2   welcome submission of comments or other

 3   documentation or comments on the draft

 4   reports, so thank you.

 5   Other public comments? Great.

 6   Hearing done. We are going to be working,

 7   Joe, with Larry to figure out some dates for

 8   in May. I don't think we have those dates

 9   yet; is that correct?

10   MR. GATTUSO: Well, I did do a

11   check of Larry's calendar for mid-May. The

12   week of the 17th.

13   CO-CHAIR TRAMONT: Calendars out,

14   BlackBerrys out, everyone.

15   So, we're looking at the week of

16   the 17th?

17   MR. GATTUSO: That was just in

18   terms of a broad request from the secretary

19   saying what would be a good week for Larry

20   Strickling.

21   And she gave me 17th, 18th, 19th

22   to the 21st. So, she didn't tell me what was

 1   pending before or after, but that was the

 2   recommendation.

 3   CO-CHAIR TRAMONT: Okay. I would

 4   modestly, and not for any particular reason,

 5   propose Wednesday, the 19th.

 6   MR. CROSBY: We'll be recovering

 7   from the APCO policy dinner banquet the night

 8   before, but -

 9   CO-CHAIR TRAMONT: It's always a

10   hard one.

11   (Laughter.)

12   CO-CHAIR TRAMONT: How do people

13   feel about Wednesday, the 19th?

14   MS. WARREN: Looks good.

15   CO-CHAIR TRAMONT: Okay. We're

16   going to tentatively put that as our date

17   subject to the secretary's calendar.

18   Anything else? Excellent. Thank

19   you very much.

20   (The meeting was adjourned at

21   12:05 p.m.)

22

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